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Aspects of the Commercial Trucking of Grain Prairie Region:

Fall 1982

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Canada

ASPECTS OF THE COMMERCIAL TRUCKING OF GRAIN PRAIRIE REGION: FALL 1982

Prepared by

A. Clayton
F. Nix
G. Sparks

Clayton, Sparks & Associates Ltd.
Saskatoon, Saskatchewan
Winnipeg, Manitoba

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FOREWORD

In the past decade, the Research Branch of the Canadian Transport Commission has undertaken many studies of the economics of grain transportation. In that time, there has been a gradual rationalization of the network of primary grain delivery points as less efficient elevators ceased operation and as branch line rationalization occurred. As a result, grain producers have had to increase the length of truck haul from farm to delivery point.

It has been suggested that larger vehicles tend to have better economics than smaller. The ultimate size is the commercial size truck, which can have a very low unit cost if fully employed. However, few producers have sufficient grain to justify owning such a vehicle for their own use, and may provide custom services for other producers. Grain producers faced with extensive hauls are also turning to commercial truckers.

In order to explore these trends more fully and to obtain a better understanding of the economics of commercial trucking of prairie grain, the Research Branch requested Clayton, Sparks and Associates of Saskatoon and Winnipeg to prepare this report. They have described the regulatory environment governing the trucking industry, the characteristics of the firms in that industry and the fleet of vehicles used, and the rates charged for the transportation of grain.

The conclusions and opinions expressed in this report do not necessarily reflect the views of the Canadian Transport Commission, but the Commission is releasing this report as part of its on-going transport research program into grain transportation and handling.

Yves Dubé
Vice-President (Research)

Canada

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Chapter 1

INTRODUCTION

1.1 Background

Trucking of grain on the Prairies is conducted by three types of operations: private farm trucking, where a producer transports his grain in a farm truck; custom trucking, where one producer transports another's product in a farm truck on a for-hire basis; and, commercial trucking, where a for-hire trucker services the needs of many producers with, typically large commercially-registered vehicles. In practical terms, there is often a fine line between the business characteristics of a custom trucker and a commercial trucker. One useful distinction between the two, however, relates to the size of vehicles employed in the operation. To this effect, and for the purposes of this study, any trucking of grain in "large", combination units (e.g., a power unit - semi-trailer), on a for-hire basis, will be deemed to be "commercial grain trucking". In almost all cases, these large combination units are "hopper-bottom" equipment (i.e., bottom unloading).

Commercial grain trucking was on the increase in the Prairies throughout the seventies. This was due to a number of factors, including: growth of grain processing activity in the Prairies; the 1971-72 Wheat Board test hauls; consolidation in the country elevator system; relaxation of vehicle weight and dimension regulations; and, the growth of a hopper-bottom fleet, initially dedicated to the servicing of intra-regional fertilizer movements.

To date, no systematic understanding of the Prairie commercial grain trucking industry - its role, capacity, cost and rate structure, organization, and regulatory environment - has been developed. Instead, only limited "pieces" of information have been developed, directed at addressing particular concerns of particular groups at different points in time.

Many view the commercial grain trucking industry as having a key role to play in the emergence of a modern, rationalized grain production, handling, processing and transportation system in the west. In this regard, for example, more intensive processing of grain products in the region would be at least in part dependent on the handling capabilities and costs of commercial grain truckers. Greater employment of solid and unit trains in moving products to export positions would also, at least in part, necessitate employment of large, commercial trucks for grain assembly.

To assist in formulating and assessing alternative scenarios relating to the development of the grain transport system in the Prairies, more and better information about commercial grain trucking is required. This study is directed at developing key aspects of that information base.

1.2 Objectives and Scope

The purpose of this study is to develop a documented data and information base respecting regulatory, operating and rate aspects of the commercial grain trucking industry in western Canada. This information will be used to assist in the formulation and assessment of alternative scenarios relating to the grain transport system.

Specific study objectives are:

(i) to describe and assess the economic regulatory environment governing commercial grain trucking within and to/from the Prairie region, in particular respecting control of entry/exit, rates and service standards;

(ii) to characterize vehicle types which can be regularly employed in commercial grain trucking within and to/from the Prairie region, and to assess their implications for effective loads, as a function of vehicle weight and dimension restrictions, by province and highway class;

(iii) to develop the data base necessary to describe and assess the region's commercial grain trucking industry and fleet. Matters of particular interest are: identification of active commercial grain truckers; description of their operating authorities; and determination of the numbers and types of vehicles operated by these carriers;

(iv) to establish (as possible) 'representative or typical' operating statistics for commercial grain truckers, in particular respecting equipment utilization, backhaul experience, seasonality and shipment size and length-of-haul characteristics; and

(v) to establish representative rate schedules illustrating the level and structure of rates applicable to the commercial trucking of grain, identifying (as applicable) the effects of shipment size, shipment distance, commodity type, seasonality, area of operation and road type over which the shipment is trucked.

The study focuses on the status of the above matters as of Fall 1982. Significant recent and anticipated changes in both the economic and weight and dimension regulatory environments are identified, and generally addressed as to their implications.

1.3 Methodological Considerations

There is a dearth of both literature and governmental summary documentation respecting the subject of commercial grain trucking in the Prairie region. Thus, there are no direct or obvious answers to the following, basic questions:

(i) who are the region's commercial grain truckers?

(ii) how many hopper-bottom trailers are registered in each of the provinces?

(iii) how much grain is trucked commercially, of what type, where from, where to, and when? and

(iv) what prices are charged for commercial grain trucking?

The most obvious sampling procedures which could have been employed to answer these basic questions are:

(i) a sample of registered truck owners;

(ii) a sample of licensed carriers (from provincial records on authorities);

(iii) a sample of truck movements (for example, at highway weigh scales); and

(iv) a sample of shipping documents from existing Statistics Canada sources (the For-Hire Trucking Survey).

There are problems with any of these approaches. A sample of provincial registration information, while feasible, had to be ruled out because of time and budget constraints: in particular, as vehicle registration information cannot identify hopper-bottom equipment, such an approach would have necessitated a sample drawn from all trucks registered in the Prairie provinces. Sampling licensed carriers (i.e., carriers with provincially-granted operating authorities) is not feasible owing to the regulatory system (a description of this system follows in Chapter 2). A sample of actual truck movements was not feasible within the context of the study's budget: in this regard, it is to be noted that much of the region's grain movements would not necessarily pass through convenient observation points (such as weigh scales on the primary highway system). Finally, the use of

the existing data sources from Statistics Canada was judged to be inappropriate if information was to be developed for 1982: at the time of conducting the study, the latest Statistics Canada data available were for 1980; further, the amount of detail collected by Statistics Canada is insufficient for the objectives of this study.

Given the difficulties with any of these four approaches, a simpler and more direct methodology has been used. First, from all available sources of information, lists of carriers - "believed to be hauling grain commercially" - were drawn up. These sources consisted of government information (related studies, operating authorities, etc.), trucking association information (in particular, "ship-by-truck" directories), shipper information, transportation broker records (or interviews), and advertisements appearing in various local publications. Second, from these same sources, the major (or 'believed to be major') carriers were noted. Third, telephone and/or personal interviews were attempted with all major carriers. (These carriers were also asked to help with the process of drawing up the list of all other carriers). Fourth, as many of the smaller carriers as time and budget limitations permitted were also interviewed.

These procedures produced a total of 75 carrier interviews, a further 75 carriers being identified, and an estimate of a further 185-295 'small' carriers (not identified). As is discussed in Chapter 4, this third category of 185-295 'small', unidentified carriers is an elusive estimate. That is, the designation of these enterprises as 'carriers' depends, to some extent, on the point of time and the precise meaning attached to 'carrier'.

1.4 Report Organization

The Report is organized as follows:

(i) Chapters 2 and 3 describe and assess the regulatory environment (economic and vehicle weight and dimension restrictions) governing commercial grain trucking in the Prairie region;

(ii) Chapter 4 presents information developed on the size, role and operating characteristics of the commercial grain trucking industry operating in the Prairie region;

(iii) Chapter 5 presents a summary and an analysis of rate information developed during the project; and

(iv) Chapter 6 presents a brief commentary on certain aspects of the existing commercial grain trucking situation.

Chapter 2

ECONOMIC REGULATORY ENVIRONMENT GOVERNING COMMERCIAL GRAIN TRUCKING: FALL 1982

2.1 Purpose

All commercial activities in Canada are subject to government regulation. The interest here, however, is in a subset of this all-encompassing regulatory framework, generally referred to as "economic" or "direct" regulation. In all three Prairie provinces, components of the trucking industry are subject to varying degrees of economic regulation: the control over "entry" to the industry (and associated aspects such as "exit" from the industry); the regulation of "service" (which shippers may be served, what type of service may be offered, etc.); and, the regulation of "rates".

In general terms, Alberta may be described as a "non-regulator" with respect to intraprovincial trucking and as a "regulator" of entry and service with respect to extraprovincial trucking; Saskatchewan and Manitoba regulate entry, service, and rates intraprovincially, and regulate entry and service extraprovincially. As with all generalizations, these statements require qualification. The purpose of this chapter is to describe the regulatory environment in each of the three provinces in considering commercial grain trucking.

2.2 Alberta

Under the Motor Transport Act, "no person may operate a public vehicle on a highway for the purpose of transporting goods ... unless the operation is carried out pursuant to the authority of an operating authority certificate or an exemption has been obtained ..."[1] Additionally, the Alberta Motor Transport Board may issue permits to non-residents (in place of operating authority certificates) for "a single conveyance of goods",[2] and the Board may issue special permits (in place of operating authority certificates) "in any instance where the operation of a public vehicle is otherwise prohibited under ... the Act ..."[3] Resident or non-resident operators are limited to six single-trip authority permits per year. Under the Act, a "public vehicle means a vehicle operated on a highway by or on behalf of a person for the transportation of ... goods ...",[4] and "goods means anything that is or may be carried by means of a vehicle and for the transportation of which compensation is payable."[5]

There is no authority under the Motor Transport Act for the control of freight rates.

In terms of vehicle registration classes, a vehicle used for for-hire transportation (a "public vehicle") is registered with a "PSV" plate.[6] It is to be noted that farm plates cannot be used in for-hire operations. Non-resident vehicles may operate in the province (in respect of vehicle registration requirements) under the provisions of a number of multi-jurisdictional reciprocity agreements, or as Alberta-registered vehicles, or on the basis of trip permits.

In a formal sense, then, the powers conferred by this Act on the Motor Transport Board suggest that all for-hire trucking is regulated. That is, entry is controlled by the mechanism of having to obtain an operating authority (either "permanent" or "trip"), and service is regulated in the sense that the truck operator must abide by the conditions attached to this operating authority (plus other conditions laid down by the Act or Regulations). All resident for-hire vehicles (barring a few minor exceptions) in Alberta can be identified by their PSV plates.

The actual practice of regulation in Alberta, as compared to the formal powers, is considerably different. First, with respect to intraprovincial for-hire grain hauling, no real regulation (of entry or service) is exercised. A person wishing to enter the business of grain hauling (or for that matter, any other type of for-hire trucking) simply applies to the Alberta Motor Transport Board for a certificate authorizing the operation of a public service vehicle. Having satisfied certain basic conditions (appropriate vehicle registration, insurance, a residency requirement, etc.), the authority ("certificate") is granted in what may be described as an "automatic" fashion. The only restrictions (routes, areas, commodities, etc.) placed on this type of intra-authority would be those contained in the application (i.e., the Board would not normally impose any restrictions). There are no further intra-regulations (service, conditions of carriage, rates, etc.) exercised with respect to grain hauling.

Second, in terms of extraprovincial hauling, under powers conferred on the Board under the (federal) Motor Vehicle Transport Act, the regulatory environment is similar to the other provinces. That is, there is entry control, but - with respect to grain hauling - there are no other real forms of economic regulation (service, rates, etc.).

A potential operator (resident or non-resident) must apply to the Board for authority and restrictions (routes, commodities, areas, shippers, etc.) may be placed on this authority. (In particular, it is understood that if there are objections to the application, the Board would attempt to restrict the authority in some manner so as to satisfy the objections.)

The following chart summarizes the regulatory environment in Alberta.

ALBERTA'S REGULATORY ENVIRONMENT
COMMERCIAL GRAIN HAULING

	Entry Controls	Rate Controls	Service Controls
Intraprovincial	Not controlled	Not controlled	Not controlled
Extraprovincial	Controlled	Not controlled	Not controlled

2.3 Saskatchewan

Under the Saskatchewan Vehicles Act, "no person ... shall operate a motor vehicle, trailer or semi-trailer on a public highway unless the vehicle is registered with the Board (The Highway Traffic Board) and a certificate of registration or permit is obtained pursuant to the Act."[7] Saskatchewan's formal regulatory system is different than any other province's in that the regulatory agency "controls" all truck activities in the province. That is, since certificates of registration are classified in terms of the activities permitted by various classes of vehicles, all vehicles are licensed by the Board where "licence" means both "registration" and "authority".

However, and notwithstanding this general "control" of all trucking activities, true economic regulation - as this term would be used in other jurisdictions - only occurs for certain registration classes in certain situations. "Controlled entry", which is a fundamental characteristic of economic regulation, only occurs in the application procedures (and some other provisions of the Act) for some of the for-hire registration classes and - in some fairly limited situations - for some of the private carriage registration classes.[8] "Rate regulation", another characteristic of economic regulation, only occurs with respect to those registration classes falling under the designation "public service vehicle certificates or permits".[9] However, actual rate regulation for for-hire grain hauling, intra or extraprovincially, is not exercised by the Board. Further, all the other characteristics of economic regulation - such as the obligation to serve, the regulation of conditions of carriage, etc. - are not exercised in respect of commercial grain hauling.

The various classes of vehicles which may be used to haul grain in Saskatchewan are as follows:

Class A

This is a "public service vehicle" classification and is the broadest for-hire authorization. It may be generally described as being subject to "controlled entry", that is, the application procedure subjects the applicant to a finding that the "public business will be promoted."[10]

However, it is to be noted that once a vehicle (or trucking operation) is registered a Class A, no specific authority (i.e., specific reference to commodities, areas, routes, etc.) is further required for the intraprovincial for-hire hauling of the Group I exempt commodities. This Group I of exempt commodities includes grain.

For extraprovincial for-hire carriage of grain, specific authorization is required.

Class AG

This is also a "public service vehicle" classification: in effect it is a sub-class of Class A. While there are some differences between Class A and Class AG, the only pertinent one to note here is that the Class AG is not authorized to haul extraprovincially. Otherwise, this Class AG, as with Class A, is permitted to haul grain for-hire intraprovincially without specific authorization.

Class C

This is a "commercial vehicle" classification and, although it may be generally regarded as "private carriage", some for-hire activities are permitted. Specifically, and only noting the for-hire activities of interest here, a Class C vehicle may be used intraprovincially and extraprovincially to haul grain for-hire. Intraprovincially, no specific authorization is required; however, to haul grain for-hire extraprovincially, specific authority from the Board is required.

Class D

For the purpose of this study, a Class D vehicle is identical to a Class C. That is, while there are differences between the two classes, these differences do not affect the ability to haul grain for-hire.

Class R

A Class R vehicle is a "farm truck" and, as such there are certain restrictions on who may register such a vehicle. Although there are several important conditions attached to a Class R registration, the only one that needs to be noted here is that grain may only be hauled on a private carriage basis.

Class F

This is also a "farm truck" classification: the important distinction (for the purpose of this study) between an R and F registration is that Class F may be used to haul grain for-hire. This general (as opposed to "specific") authorization to haul grain for-hire is generally limited to intraprovincial movements.[11] Although a Class F registration is limited to three-axle trucks, it is only the two-axle Class F vehicles which are permitted to haul grain for-hire. On the surface, this restriction might appear to limit the owner of a Class F truck to participate in any significant amounts of commercial grain hauling. This, however, is not the case.

First, a two-axle Class F truck could be used with a semi-trailer. However, since the gross vehicle weight of the semi-trailer would be assigned (for registration purposes) to the towing unit, the practical upper limit would be 28 000 lbs (approximately 12.7 tonnes). This would rule out two-axle F trucks, with semi-trailer, as a significant component of Saskatchewan's commercial grain hauling fleet.

With full trailers ("pups"), however, there is a capability to use a Class F registration for commercial grain hauling. In this case, there is no assignment of the weight of the trailer to the towing unit. As long as the truck (two-axle F truck) and the trailer ("pup") are within the provincial limits imposed by vehicle weight and dimension regulations, the truck-pup combination may be used at a high enough total weight to make commercial grain hauling feasible. (The practical upper limit for the gross vehicle weight of such a combination is probably 56 000 lbs or 25.4 tonnes.)

Permits

Finally, it may be noted that the Board - upon the determination of the "public interest" being served - may issue permits to resident or non-resident vehicles "for such period as may be specified" for permission to engage in various activities where either the general or specific authorization does not exist.[12] With respect to for-hire grain hauling, it is understood that permits would only be used on extraprovincial movements. For example, an existing Class A or C Saskatchewan carrier with extraprovincial authority, but without the specific authority to haul grain for-hire on an extraprovincial basis, may apply for a permit under some circumstances (presumably for a limited number of trips or for a short period of time). Similarly, out-of-province carriers (private or for-hire) may do likewise.

The following chart summarizes the regulatory environment in Saskatchewan in respect of commercial (for-hire) grain hauling. It is to be understood that the term "not entry controlled" is used in the context of the specific authority to haul grain. That is, and as discussed previously, some of the licence classes are themselves "entry controlled", but, given the grant of authority, there is no specific control over grain hauling. Further, the term "control" has to be understood in terms of Saskatchewan's rather broad control over all trucking activities.

SASKATCHEWAN'S REGULATORY ENVIRONMENT
COMMERCIAL GRAIN HAULING

	Entry Controls	Rate Controls	Service Controls
Intraprovincial	Not controlled	Not controlled	Not controlled
Extraprovincial	Controlled	Not controlled	Not controlled

To expand on the information shown in this chart, it may be noted that there is no economic regulation of for-hire grain hauling intraprovincially. Class A and AG public service vehicles, Class C and D commercial vehicles, and Class F farm vehicles all have a general authority to engage in intraprovincial for-hire grain trucking without any specific

limitations in terms of areas, routes, shippers, service levels, etc.

In terms of extraprovincial carriage, entry is controlled by the Board. However, no other forms of economic regulation (rates, service) are exercised. While formally the Class A, C, and D registrations may incorporate the specific authorization to haul grain extraprovincially, it is believed that Class A and C comprise the significant elements. Finally, with respect to the extraprovincial market, it is to be noted that some vehicles (resident or non-resident) may engage in this activity on a "permit" basis.

2.4 Manitoba

In Manitoba, there are four classes of trucks which may be used to haul grain: i) a "public service vehicle", which will be indicated by the letters "PSV" in the following notes (although actual registration plates use the letters "PA", "PS", or "PX"); ii) a "commercial truck", or "CT" as it will be indicated (registration plates use "CT", "CV", or "CW"); iii) a "T-plate" licensed truck ("T" or "Y" on registration plates); and, iv) a "farm truck", or "F-plate".

The Highway Traffic Act stipulates that no person shall cause to be operated a "public service vehicle ... for the transportation of persons or property for compensation without holding a certificate approved by the Transport Board (Manitoba Motor Transport Board) and issued by the registrar ..."[13] A "public service vehicle" (PSV) is defined as a motor vehicle or trailer operated "for the transportation for gain or compensation of persons or property upon the highway".[14] A person wishing to operate a public service vehicle (or, in effect, wishing to operate a for-hire common carrier business) must apply to the Board, and the Board may issue the necessary certificate on a finding "that the existing facilities for transportation are insufficient, or that the public convenience will be promoted ..."[15] Certificates (or operating authorities) will generally be restricted in the sense of routes, commodities, shippers, etc. The Board is given very broad powers to regulate the rates and service of PSV carriers.[16]

A "commercial truck" (CT) is defined under the Act as "any truck not a public service vehicle".[17] There are a series of exceptions and restrictions to this definition, but generally a commercial truck may be regarded as a vehicle used in a private carriage situation. The Act stipulates that no person may operate a commercial truck without - in addition to registering it - obtaining a licence from the Registrar "authorizing its operation as a commercial truck".[18] "The form of the licence and application shall contain information verified by affidavit, relating to the nature of the proposed operations of the vehicle."[19] In a formal sense, then, Manitoba is one of the few

provinces with some partial "entry controls" for private carriage. (These are "partial" controls in the sense that there are no formal mechanisms specifying that a finding must be made on the basis of the "public interest" or some such other entry-controlling criteria.)

A "T"-plated truck is, or may be used as a "local haulage" truck. It may be either a commercial truck or a public service vehicle. These trucks may be operated within a city, town, or village or to haul "exempt" commodities (which include farm products).

The Manitoba Highway Traffic Act defines a "farm truck" as a truck owned by a farmer;[20] and, under Section 169 of the Act, a farm truck is permitted to haul products to or from the farmer's farm or to or from another farmer's farm.[21] Although there is a general prohibition against using a farm truck "for hire",[22] it is permissible to use a farm truck for-hire in the case of hauling "cereal grains" from where the crop was grown to a grain elevator, a processing plant, or a market.[23] This may include extraprovincial (including international) hauls. The Board believes that "cereal grain" is to be interpreted broadly as "grain" (that is, more broadly than the "cereal grain" definition used by the Canada Grains Council).

By virtue of Board Order 10/73 made pursuant to Section 261 of the Highway Traffic Act, "farmers' grain to market" is exempted from the requirements of CT or PSV licensing. The effect of this exemption is that, in addition to farm trucks, PSV, CT and T-plated trucks may also be used to haul grain on the primary movement (i.e., from the farm) on a for-hire basis both intra and extraprovincially.

To summarize:

(i) primary movement of grain - any of the four types of trucks (PSV, CT, T, or F) may be used, for-hire, either intra or extraprovincially. This is unregulated trucking (i.e., in terms of entry, service, or rate controls).

(ii) secondary movement of grain - may be hauled as private carriage by a CT truck. (This, as discussed, may be formally described as "partly" regulated in terms of entry controls. However, in practice, it is probably better described as unregulated.)

(iii) secondary movements of grain - may be hauled for-hire only under a PSV authority. In this case, specific authority - with the general type of restrictions (e.g., area or

routes) is required. Further, this type of carriage falls under the general service and rate regulatory controls of the Board (i.e., the same formal controls applying to general freight common carriers). In practice, however, service and rate regulation is not as vigorously applied on these grain-haulage situations. (For example, a carrier can generally file his own rates with the Board; whereas, for most general freight - intraprovincial only - there is a prescribed system of rates.)

Finally, it should be noted that the Board is authorized to issue single-trip certificates to either resident or non-resident carriers.[24] (Given the general exemption for grain, these are used for the secondary movements of grain and/or for non-resident carriers on either primary or secondary movements.)

The following chart summarizes the regulatory environment in Manitoba:

MANITOBA'S REGULATORY ENVIRONMENT
COMMERCIAL GRAIN HAULING

	Entry Controls	Rate Controls	Service Controls
Intraprovincial			
- Primary movements	Not controlled	Not controlled	Not controlled
- Secondary movements	Controlled	(Some) control	(Some) control
Extraprovincial			
- Primary movements	Not controlled (resident carriers)	Not controlled	Not controlled
- Secondary movements	Controlled	Not controlled	(Some) control

2.5 Summary

To summarize, with the exception of secondary grain movements (i.e., other than off the farm) in Manitoba, all intraprovincial commercial grain hauling is unregulated in the Prairie provinces. Extraprovincially, on the other hand, all three provinces control entry to the industry: there is no effective regulation of service or rates on extraprovincial hauling.

Further, it may be noted that this regulatory environment is "stable" in the sense that there have been no changes in the recent past, nor are there any contemplated changes. All provinces (most notably Manitoba at the current time, although Alberta and Saskatchewan also in past years) have undertaken reviews of their regulatory system. While it is certainly conceivable that these reviews might result in some changes for some sectors of the industry, discussions with all three provinces have not indicated that there is any contemplation of any substantive changes with respect to commercial grain hauling.

REFERENCES

1 Alberta Motor Transport Act (MTA), Section 37.

2 Alberta Motor Transport Act (MTA), Section 19.

3 Alberta Motor Transport Act (MTA), Section 20.

4 Alberta Motor Transport Act (MTA), Section 1(r).

5 Alberta, Motor Transport Act (MTA), Section 1(g).

6 There are some minor exceptions, for example, in urban or local hauling situations.

7 Saskatchewan, Vehicles Act (VA), Section 30(1).

8 There is room for some debate as to whether or not the term "controlled entry" properly applies to private carriage situations.

9 Saskatchewan, VA, Section 27. It is to be noted that the formal power to regulate rates only exists with respect to public service vehicles. Since for-hire grain hauling is permitted by other vehicle classes (i.e., non-public service vehicles), it appears that the Board does not have the authority to regulate all for-hire grain trucking rates. In terms of the rate regulation of freight moving on public service vehicles, it might also be noted that the Board has not exercised this power with respect to the exempt commodities (which include grain). However, it is understood that there has been some contemplation in Saskatchewan of modifying the definitions of "general merchandise", "exempt commodities" which might result in the designation of grain being changed. Nevertheless, it is understood that whatever the changes, there is no contemplation of bringing grain within the group of "rate-regulated" commodities.

10 Saskatchewan, VA, Section 33(2).

[11] There may be some minor exceptions to this statement.

[12] Saskatchewan, VA, Section 53.

[13] Manitoba Highway Traffic Act, Section 258(1).

[14] Manitoba Highway Traffic Act, Section 2(42).

[15] Manitoba Highway Traffic Act, Section 263(2).

[16] Manitoba Highway Traffic Act, Section 255(1)(e) for rate regulations, various other sections of the Act for other aspects of regulation.

[17] Manitoba Highway Traffic Act, Section 2(6) and Sections 3(1) and 3(2).

[18] Manitoba Highway Traffic Act, Section 291(1).

[19] Manitoba Highway Traffic Act, Section 291(2).

[20] Manitoba Highway Traffic Act, Section 2(18).

[21] There are some exceptions.

[22] Manitoba Highway Traffic Act, Section 169.1(4).

[23] Manitoba Highway Traffic Act, Section 169.1(5).

[24] Manitoba Highway Traffic Act, Sections 255(2) and (3).

Chapter 3

WEIGHT AND DIMENSION REGULATIONS GOVERNING COMMERCIAL GRAIN TRUCKING: FALL 1982

3.1 Purpose

Vehicle weight and dimension regulations constitute a principal determinant of the economics of commercial grain trucking. It is these regulations which largely characterize the types, configurations and sizes of vehicles which can be employed in commercial grain haul, and the maximum allowable axle and gross combination weight limits at which these vehicles can be operated. The configuration, dimension and weight limits of a vehicle in turn determine its maximum volume and weight payload handling capability.

Generally, the larger the truck (or more particularly, truck-trailer combination) the lower the unit payload transportation cost. Thus, the less restrictive the vehicle weight and dimension law, the more cost-effective can be the commercial trucking of grain.

There has been a substantial relaxation in vehicle weight and dimension regulations in the Prairie region throughout the period 1974 to the present. This relaxation commenced with the signing of the joint federal-provincial Highway Strengthening Program in 1974. This program designated a 'primary' highway network throughout the Prairies, upon which vehicles of particular configuration were permitted to operate at gross combination weights (gcw's) up to 50 000 kg (or 110 000 lbs). Previous to this, vehicles were restricted to gcw's of 33 600 kg (or 74 000 lbs).

Since the signing of the agreement, a number of other adjustments in the vehicle weight and dimension regulations applicable to the Prairies has been introduced. These have included: increasing allowable vehicle lengths; extending use of the primary highway system weight limits to certain secondary highways for certain periods; and most recently (Spring 1982) a further relaxation in the primary highway system allowable gcw's and a large relaxation of allowable gcw's on secondary highways. These changes, coupled with improved vehicle technology (and in particular, decreased tare weights), have led to important increases in payload capacity of truck-trailer combinations used, in particular, for the transportation of bulk commodities such as grain and fertilizer.

This chapter: summarizes the current (Fall 1982) vehicle weight and dimension regulatory environment which governs commercial grain trucking within and to/from the Prairie region; translates this regulatory environment into 'typical' units and their respective grain payload capacities; examines the prospects for further changes; and discusses a number of other relevant aspects of vehicle weight and dimension regulations.

3.2 Regulations Governing Intra-Regional Operations: Fall 1982

The existing vehicle weight and dimension regime applicable to commercial grain trucking in the west is complex, with many variations depending on: vehicle configuration, highway class, tire width, axle spacing, weight-to-power ratio, number of tires, and season of operation.

Table 3.1 presents a summary of the maximum 'basic'[1] weight and dimension limits which, for practical purposes, govern commercial grain trucking in the Prairie provinces.[2] These limits are shown for each province for three basic classes of highways:

> Class 1 Highways: These are the principal highways in each province, and they are subject to each province's most relaxed weight and dimension regulations. In Manitoba and Saskatchewan, Class 1 highways are basically comprised of the same routes which were initially designated in the 1974 federal-provincial Highway Strengthening Program as part of the so-called primary highway network. Alberta has designated much of its provincial highway system as 'Class 1' from the standpoint of weight and dimension restrictions.
>
> Class 2 Highways: This class includes most other highways under the jurisdiction of the three provincial highway departments, not included in the respective Class 1 systems.
>
> Other Highways: This class includes most other public roads in each province. These roads are generally under the authority of municipal governments, albeit their vehicle weight and dimension bylaws are typically subject to influence and/or approval by provincial authorities.

In Saskatchewan, the 'definition' of primary highways (i.e., Class 1 highways) permits certain 'off-primary' movements at primary highway weight and dimension limits. The extent of this permissible 'off-primary' movement in Saskatchewan is summarized as follows:

> 8 km along any non-primary provincial highway from the intersection of that highway with any primary highway

Table 3.1

BASE-LINE MAXIMUM VEHICLE WEIGHTS AND DIMENSIONS
AS A FUNCTION OF HIGHWAY CLASS
PRAIRIE PROVINCES: NOVEMBER 1, 1982

Attribute	Units	Highway Class*	Manitoba	Saskatchewan	Alberta
Maximum Length	m/ft	1	23.0/75.5	23.0/75.5	23.0/75.5
		2	"	"	"
		0	"	"	"
Maximum Width	m/ft	1	2.6/8.5	2.6/8.5	2.6/8.5
		2	"	"	"
		0	"	"	"
Maximum Height	m/ft	1	4.15/13.6	4.15/13.6	4.15/13.6
		2	"	"	"
		0	"	"	"
Maximum Wt. on Front Steering Axle	tonnes/kips***	1	5.5/12.0	5.5/12.0	7.3/16.0
		2	"	"	"
		0	"	"	**
Maximum Single Axle Wt. (other than front steering axle)	tonnes/kips	1	9.1/20.0	9.1/20.0	9.1/20.0
		2	8.2/18.0	8.2/18.0	8.2/13.0
		0	"	"	**
Maximum Tandem Axle Wt.	tonnes/kips	1	16.0/35.0	16.0/35.0	16.8/37.0
		2	14.5/32.0	14.5/32.0	14.5/32.0
		0	"	"	**
Maximum Gross Combination Wt. (gcw)	tonnes/kips	1	56.5/124.6	53.5/118.0	53.5/118.0
		2	47.6/105.0	49.0/108.0	53.5/118.0
		0	20.0/44.1	34.5/76.0	**
Minimum No. of Axles Required to Achieve Maximum gcw		1	8	7	7
		2	7	7	8
		0	3	5	**

* 1 = Class 1 2 = Class 2 0 = Other
** ranges from 50 - 75 - 90 - 100% of Class 1 weights
*** kips = thousand pounds

PLUS 8 km along any non-primary provincial highway extending from the corporate limits of any centre with a population of at least 1 000 persons and served by a primary highway PLUS to a number of specially designated centres.[3]

Alberta and Manitoba do not have equivalent off-primary movement provisions in their respective regulations.

The following observations respecting vehicle weight and dimension limits are of particular consequence to intra-regional commercial grain trucking in the Prairies:

(i) each of the three Prairie provinces has three basic classes of highways upon which commercial grain trucking can take place;

(ii) all three provinces have adopted a standard set of dimension limits which apply to trucking operations on all public highways in the region. These standards are 23.0 m, 2.6 m, and 4.15 m for length, width and height, respectively;

(iii) axle weight limits on Class 1 primary highways in all three provinces are, for all practical purposes, equal, at 5 500 kg, 9 100 kg and 16 000 kg on the front steering axle, other single axles and tandem axles, respectively. (Alberta permits slightly higher weights than does either Manitoba or Saskatchewan on front steering axles and tandem axles. These higher limits are, however, of little practical consequence to payload capacity or operating costs);

(iv) axle limits on non-Class 1 highways in the region are 10% lower than those permitted on Class 1 highways, at 8 200 kg and 14 500 kg on single and tandem axles, respectively;

(v) maximum allowable gcw's on Class 1 highways in Alberta and Saskatchewan are the same, at 53 500 kg. Manitoba restricts B-Train combinations to this 53 500 kg limit, but permits higher gcw's on A-Train combinations (up to a maximum of 56 500 kg on 8-axle A-Trains).[4] This higher limit translates into a 2 500 kg potential payload advantage for A-Trains as compared with B-Trains operating on Class 1 highways in Manitoba;[5]

(vi) maximum allowable gcw's on Class 2 highways in the region are limited to 47 600-49 000 kg (with the lower limit applying in Manitoba); and

(vii) maximum allowable gcw's on 'other' highways (i.e., those typically under the jurisdiction of municipal governments) can be substantially lower than those permitted on primary and secondary highways (i.e., those under the authority of provincial highway departments).

It is to be noted that weight limits on this class of highway can and do vary significantly between local government jurisdictions. This variability, coupled with a general ignorance of specific provisions and sporadic (often non-existent) enforcement, makes it difficult to generalize as to the practical implications of vehicle weight and dimension regulations on commercial grain trucking on these roads.

3.3 Regulations Governing Extra-Regional Operations: Fall 1982

Extra-regional commercial grain trucking occurs, for all practical purposes, on Class 1 highway routes and their connections into B.C., Ontario and the northern border states of Montana, North Dakota, and Minnesota.

Figure 3.1 compares the Class 1 highway operating restrictions of the Prairie region with those for principal highways in adjacent Canadian and American[6] jurisdictions.

The most notable variations in vehicle weight and dimension regulation of consequence to extra-regional trucking are:

Prairie Region - B.C.: Alberta has a gcw limit of 10 000 kg less than B.C.

Prairie Region - Ontario: Manitoba's axle and gcw limits are substantially lower than those in Ontario. On the other hand, Manitoba's maximum permissible combination length is 2 m longer than is the case in Ontario.

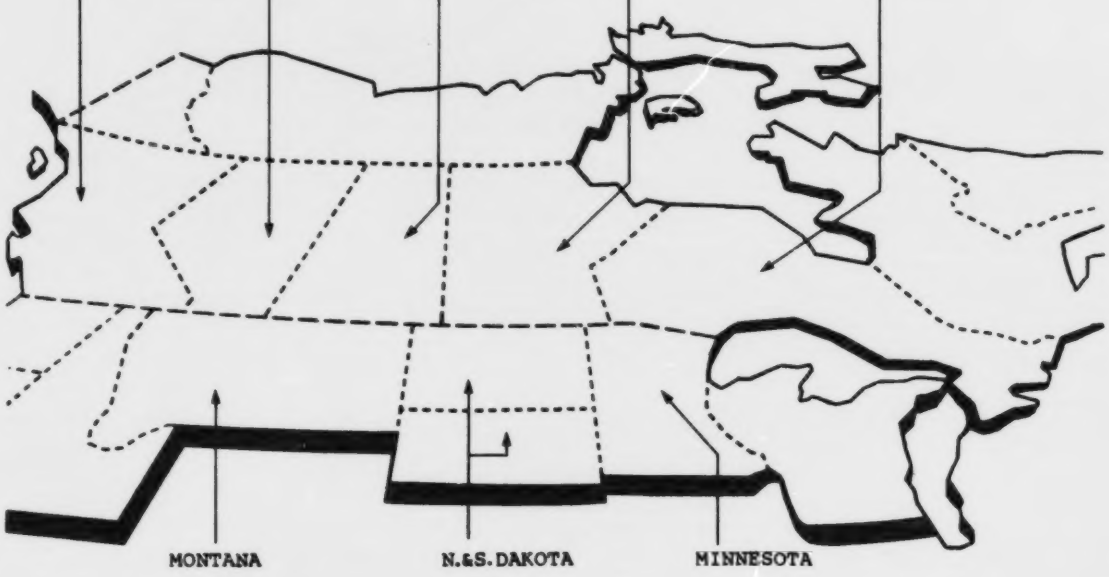
Prairie Region - North Dakota: North Dakota's gcw limit is 20 200 kg less than is the case in Manitoba, and 17 200 kg less than for Saskatchewan.

Prairie Region - Minnesota: Minnesota's gcw limit is 20 200 kg lower than is the case in Manitoba. Further, Minnesota's maximum permissible combination length is 3.2 m shorter than is the case in Manitoba.

FIGURE 3.1

COMPARISON OF ESSENTIAL VEHICLE WEIGHT AND DIMENSION RESTRICTIONS (PRIMARY HIGHWAYS) PRAIRIE PROVINCES AND ADJACENT JURISDICTIONS

(EFFECTIVE AS OF NOVEMBER 1, 1982)



a - height (m)
b - width (m)
c - length (m)
d - steering axle ('000s kg)
e - single axle ('000s kg)
f - tandem axle ('000s kg)
g - gross vehicle wt. ('000s kg)
N.S. - not specified

Prairie Region - Montana: Montana's gcw limit is 20 200 kg lower than is the case in Alberta and Saskatchewan. Further, Montana's maximum permissible combination length is 3.2 m shorter than is the case in the Prairies.

3.4 Implications for Vehicle Combinations and Effective Loads

For purposes of this study, 'commercial grain trucks' are considered to be large, combination units employed in grain transport on a for-hire basis. This section characterizes the types of such units regularly (i.e., excluding spring bans and winter premiums) and legally (i.e., without special permit) permitted, by the existing vehicle weight and dimension regulations, to operate between various types of origin-destination pairs, as characterized by the highway class(es) of routing between origin and destination and the jurisdiction(s) of operation.

There are four basic categories of vehicle combinations possible within the existing vehicle weight and dimension environment:

Category 1: truck[7] plus trailer[8]
Category 2: tractor[9] plus semi-trailer[10]
Category 3: tractor plus semi-trailer plus trailer (A-Train)
Category 4: tractor plus semi-trailer plus semi-trailer (B-Train)

Each basic category has a number of possible sub-categories, distinguished by the number and configuration of axles.

Table 3.2 characterizes typical units in each of these categories, in terms of dimensions, tare weight and cubic payload capacity.

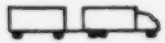
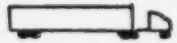
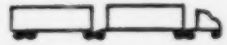
Also presented in Table 3.2 are the 'legal' weight payload capacities of these typical units while operating in the Prairie region as a function of highway class of operation and the province of operation.[11]

Generally, Category 2, 3 and 4 type combinations will 'weight-out' before 'bulking-out'. To illustrate, consider the following 'bulk-out' densities (i.e., product densities below which bulking-out would occur before the weight payload limit is achieved) for the various combinations presented in Table 3.2 and their respective payload weight capacities:

truck and trailer = 54 - 63 lbs/bushel
tractor and semi = 43 - 45 lbs/bushel

Table 3.2

PHYSICAL AND PAYLOAD-HANDLING CHARACTERISTICS
TYPICAL VEHICLE COMBINATIONS USED IN COMMERCIAL GRAIN TRUCKING
PRAIRIE PROVINCES: NOVEMBER 1, 1982

	CATEGORY 1 Truck & Trailer	CATEGORY 2 Tractor & Semi	CATEGORY 3 Tr. & Semi & Trl. (A-Train)	CATEGORY 4 Tr. & Semi & Semi (B-Train)
				
LENGTH:				
1st Trailer (truck box) (ft)	14-17	38-42	32-34	25
2nd Trailer (ft)	14-17	N/A	14-17	27
Combination (ft)	37-45	55-60	65-70	70-72
CUBIC CAPACITY:				
1st Trailer (truck box) (ft^3)	610-750	1 450-1 600	1 210-1 290	1 000
2nd Trailer (ft^3)	610-750	N/A	610-750	1 050
Total (ft^3)	1 220-1 500	1 450-1 600	1 820-2 040	2 050
TARE WEIGHT:				
Truck/Tractor (kips)	15.0-17.0	16.0-17.5	16.0-17.5	16.0-17.5
1st Trailer (kips)	N/A	11.1-11.5	10.0-10.6	8.0-10.0
2nd Trailer (kips)	7.3-7.7	N/A	7.3-7.7	8.0-10.0
Total (kips)	22.3-24.7	27.1-29.0	33.3-35.8	32.0-37.5
PAYLOAD CAPACITY:				
Bushels	980-1 200	1 170-1 270	1 470-1 640	1 650
Weight (kips)/(tonnes)				
CLASS 1 HIGHWAYS:				
Manitoba	(62-65)/(28-29)	(53-55)/(24-25)	(87-89)/(39-40)	(80-86)/(36-39)
Saskatchewan	" "	" "	(82-84)/(37-38)	" "
Alberta	" "	" "	" "	" "
CLASS 2 HIGHWAYS:				
Manitoba	(55-58)/(25-26)	(47-49)/(21-22)	(69-71)/(31-32)	(67-73)/(30-33)
Saskatchewan	" "	" "	(72-74)/(33-34)	(70-76)/(32-35)
Alberta	" "	" "	" "	" "

tractor-semi-pup = 51 - 56 lbs/bushel
tractor-semi-semi = 48 - 52 lbs/bushel

These can be compared with the following typical product densities (lbs/bushel): wheat (60); barley (48); rye (56); rape and flax (50); and oats (34). Only oats and 'screenings' would typically 'bulk-out'.12

Based on Table 3.2, and assuming 'legal' loading, typical maximum loads for various routing possibilities, vehicle combinations and commodity types can be established. To illustrate, consider the following examples:

Example 1:
Commodity: Flax (50 lbs/bushel)
Vehicle Type: Category 3 (A-Train)
Origin: In Saskatchewan (on a Class 2 highway)
Destination: Brandon (on a Class 1 highway)

Typical Maximum Load = 34 tonnes (controlled by Saskatchewan's gcw limit of 49 tonnes on Class 2 highways).

Example 2:
Commodity: Corn (52 lbs/bushel)
Vehicle Type: Category 2 (Tractor and Semi)
Origin: Minneapolis (on a Class 1 highway)
Destination: Feed lot in Manitoba (on a Class 1 highway)

Typical Maximum Load = 24 tonnes (controlled by Minnesota's gcw limit of 36.3 tonnes on Class 1 highways).

Example 3:
Commodity: Barley (48 lbs/bushel)
Vehicle Type: Category 4 (B-Train)
Origin: Outside Regina (on a Class 2 highway)
Destination: Weyburn (on a Class 1 highway)

Typical Maximum Load = 35 tonnes (controlled by Saskatchewan's gcw limit of 49 tonnes on Class 2 highways).

3.5 Recent and Anticipated Changes in Vehicle Weight and Dimension Regulations

Important changes in the vehicle weight and dimension regulation environment have taken place in the Prairies within the last year. These are:

(i) a 7-14% increase in allowable gcw limits on Class 1 highways
(ii) a 42-45% increase in allowable gcw limits on Class 2 highways
(iii) a standardization of allowable combination lengths at 23.0 m (75.5 ft)

These changes were designed to facilitate the effective employment of A and B-Train configurations in commodity hauls within the region, and extra-regionally to Thunder Bay and British Columbia.

Weight and dimension restrictions in the United States, however, continue to limit commodity movements between the Prairies and the United States to employment of 5-axle (power unit - semi-trailer) combinations. This factor influences the type of equipment purchased by Canadian carriers, if those carriers are engaged in significant international movement.

In the short term, no significant change is planned for the vehicle weight and dimension environment governing commercial grain trucking in the Prairies. Areas, however, where meaningful changes (i.e., further relaxation) might be anticipated are:

(i) a further relaxation of gcw limits on primary highways in Alberta and Saskatchewan (up to, say, the current Manitoba limit) for A-Train configurations; and

(ii) permitting triple axle groups to be operated at a higher group weight than are tandem axles, with an attendant relaxation of gcw limits (up to, say, the current Ontario limits).

(A major Canadian research project directed at investigating stability, control and pavement impacts associated with different types of vehicle combinations has been proposed to a joint CCMTA/RTAC Research Committee on Vehicle Weights and Dimensions. A three-year program is envisaged; the findings will undoubtedly constitute the major reference point for further changes in Canada's vehicle weight and dimension regulations.)[13]

3.6 Other Considerations

3.6.1 Current Fleet Characteristics

Category 2 type combinations (tractor plus semi-trailer) dominate commercial grain trucking at the present time. Three factors have created this situation:

First: until Spring 1982, A and B-Train configurations were restricted to the same gcw limits on non-Class 1 highways as were

tractor-semi-trailer combinations. At such limits, the 'doubles' (i.e., A and B trains) are operating substantially below capacity. Too little time has passed for the fleet to adapt to the relaxed gcw limits on the Class 2 highway system.

Second: many of the vehicles used in commercial grain trucking in the prairies are also employed in farm commodity haul (i.e., grains and fertilizer) to and from the United States, and in particular to and from Minnesota. Weight and dimension regulations in Minnesota prohibit effective use of doubles, thereby obliging truckers to operate standard 5-axle tractor-semi-trailer combinations.14

Third: many of the hopper-bottom trailers employed in commercial grain trucking are also actively employed in intra-regional fertilizer haul. Discussions with industry officials suggest that few farmers are prepared to receive fertilizer shipments of greater than 20-25 tonnes. This shipment size is too small for A and B-Trains, but just right for power unit semi-trailer combinations.

This dominance of standard tractor - semi-combinations in the commercial grain haul business will in time probably give way to much greater employment of doubles, as the fleet adjusts and the marketplace (both for grain and fertilizer movements) responds to the productivity advantages associated with larger shipment sizes. A-Train combinations would appear to be more attractive than B-Trains for grain haulers. To this effect, they offer more flexibility in serving different shipment sizes within Canada, and they can be 'broken-down' and still service U.S. movements effectively.

3.6.2 Enforcement Considerations

To this point, the description and assessment of vehicle weight and dimension regulations has been from a de jure perspective. In considering the effect of these regulations on commercial grain trucking (and other trucking operations), it must also be appreciated that there are some de facto dimensions to these regulations. Specifically, many farms are located off the Class 1 highway network, and most of the enforcement activity - of vehicle weight and dimension regulations - occurs on the Class 1 system. The result is that many grain hauls may actually move at the limits imposed by the regulations affecting Class 1 highways (over which most of the hauling occurs) and not the limits imposed by regulations affecting non-Class 1 highways (over which only a very small portion of the haul occurs).

There is no statistical evidence to substantiate this possibility; however, as is discussed in Chapter 4, many commercial grain truckers report "typical payloads" for their equipment that would appear to give this possibility some credence.

3.6.3 Permanence of Regulations

There is some debate as to the effect of changing vehicle weight and dimension regulations on highway infrastructure (pavements, bridges). The previously mentioned CCMTA/RTAC study program presumably will resolve some of this debate.

The importance of this debate - and any forthcoming resolution of it - for this study is simply to note that the existing regulations cannot be considered as a permanent factor affecting commercial grain trucking. Provincial governments could easily change these regulations with consequent major impacts on the economics of the trucking industry.

REFERENCES

1 'Basic' limits may be exceeded by special permit. They are also subject to various other restrictions, such as axle spacing requirements, tire widths, tire pressures, special bridge restrictions, etc.

2 The information presented is a summary of the essential aspects of a complex set of detailed regulations. The regulations should be consulted directly when considering 'abnormal' vehicle configurations and/or specific routing options.

3 Birch Hills, Caron Delmas, Disley, Dundurn, Fiske, Girvin, Grand Coulee, Grenthal, Janse, Lac Vert, Laura, MacDowell, Marshall, Mozart, Neunlage, Pense, Piopot, Pilot Butte, Pleasantdale, Rush Lake, Viscount, Waldeck, Webb, Weldon, Yarbo and Zealandia, plus the P.C.A. potash mine.

4 A-Trains are made up of a tractor - semi-trailer - trailer, whereas B-Trains are comprised of a tractor - semi-trailer - semi-trailer. Both combinations are often referred to as 'doubles'.

5 In the Spring 1982 change in gcw limits, Saskatchewan and Alberta opted to restrict A-Train combinations to the same gcw limit required for B-Train combinations based on allowable axle weights, even though their axle weight provisions would have permitted the Manitoba level of gcw for A-Trains. The rationale for this is that Saskatchewan and Alberta prefer to encourage B-Train rather than A-Train configurations, (apparently) for reasons of safety and stability.

6 The U.S. regulations shown are those which are applicable on interstate highways.

7 A 'truck' is a single unit where the power plant and payload container are directly connected.

8 A 'trailer' is a single unit comprised of a payload container, and where the unit's weight is fully supported by the unit's axles.

9 A 'tractor' (or power unit) is a single unit which has no payload container, and is used to tow a semi-trailer which is connected to the tractor with a 'fifth wheel'. Part of the weight of the semi is transferred through the fifth wheel to the axles of the tractor.

10 A 'semi-trailer' is a single unit comprised of a payload container, where the unit's weight is only partly supported by the unit's axles.

11 No weight payload capacities are presented for 'other' highways because of the variable nature of gcw limits on these roads.

12 In practice, where a carrier is regularly engaged in handling low-density commodities, longer trailers or semi-trailers and/or 'extenders' would typically be employed, so as to increase the volume-capacity of the unit to the point where a 'weight-out' load could be handled. In this regard, the density of even low-density grains is such that weight-out loads can always be achieved within the dimension limits imposed by the regulations.

13 "A Study of the Effects of Variations in Truck Weights and Dimensions on Vehicle Stability and Control Characteristics and Pavement Loadings", prepared by Damas and Smith, July 1982.

14 Note that these operators may have small trailers which they add to their units to create A-Trains for Prairie operations. Alternatively, small semi-trailers are sometimes employed as the 'lead' unit in a B-Train for Prairie operations.

Chapter 4

COMMERCIAL GRAIN TRUCKING FLEET SIZE AND OPERATING CHARACTERISTICS: FALL 1982

4.1 Purpose

This chapter presents and comments on the data and information developed in the course of this study respecting the size, role and operating characteristics of the Prairie region's commercial grain trucking industry and fleet, as of Fall 1982. In particular, the following matters are addressed:

(i) identification of carriers and their operating authorities;

(ii) description of the numbers, types and sizes of vehicles employed by commercial grain carriers;

(iii) origin-destination patterns of operation, haul distances, equipment utilization levels, backhaul experience, commodity handlings and shipment sizes;

(iv) seasonal variations in activity; and

(v) equipment ownership

Rate and cost information pertaining to commercial grain trucking is discussed in Chapter 5.

4.2 Sources of Information

There is no systematic data source available from either public or private sector agencies dealing with the commercial grain trucking industry. Thus, for example, it is impossible to isolate commercial grain truckers or commercial grain trucks in vehicle registration data banks, or government (Saskatchewan and Manitoba) vehicle insurance records. Further, given the (effectively) non-regulated nature of intraprovincial commercial grain trucking in the Prairie provinces (see Chapter 2), operating authority records are of little value in identifying intraprovincial operators. Authority records, however, do serve as one indicator of extraprovincial operators, although there are some factors limiting their usefulness:

(i) 'non-complimentarity' (i.e., holding an extraprovincial authority in one jurisdiction which is not complimented in another);

(ii) 'non-exercise' (i.e., holding appropriate authority, but not exercising it);

(iii) 'authority-cascading' (i.e., 'grain' being encompassed within another, broader, authority term);

(iv) 'trip-permitting' (i.e., authorizing operations by trip or time-limited permits only, issuing no formally (recorded) operating authority); and

(v) 'mid-night permitting' (i.e., non, or 'loose', enforcement).

Given these shortcomings in public records, and an effectively non-existent literature base on the subject of commercial grain trucking, private sector sources were deemed to be of most value for purposes of establishing information and data on the size, role and operating characteristics of the industry. In the course of this work, contact has been made with the following industry groups:

Trucking Industry Spokesmen: Representatives of the three Prairie trucking associations were contacted. Each was able to identify 'member' carriers involved in commercial grain haul, as well as some of the more substantial 'non-member' carriers.

Shipping Industry Spokesmen: Officials of various major shipping organizations involved in grain and/or bulk fertilizer trucking were contacted.

Individual Trucking Firms: Seventy-five different carriers (31 domiciled in Manitoba, 23 domiciled in Saskatchewan and 21 domiciled in Alberta) have been contacted by phone or in person.

Information developed from the above sources, coupled with limited data available from public records, has been 'distilled' to provide the industry profile presented here.

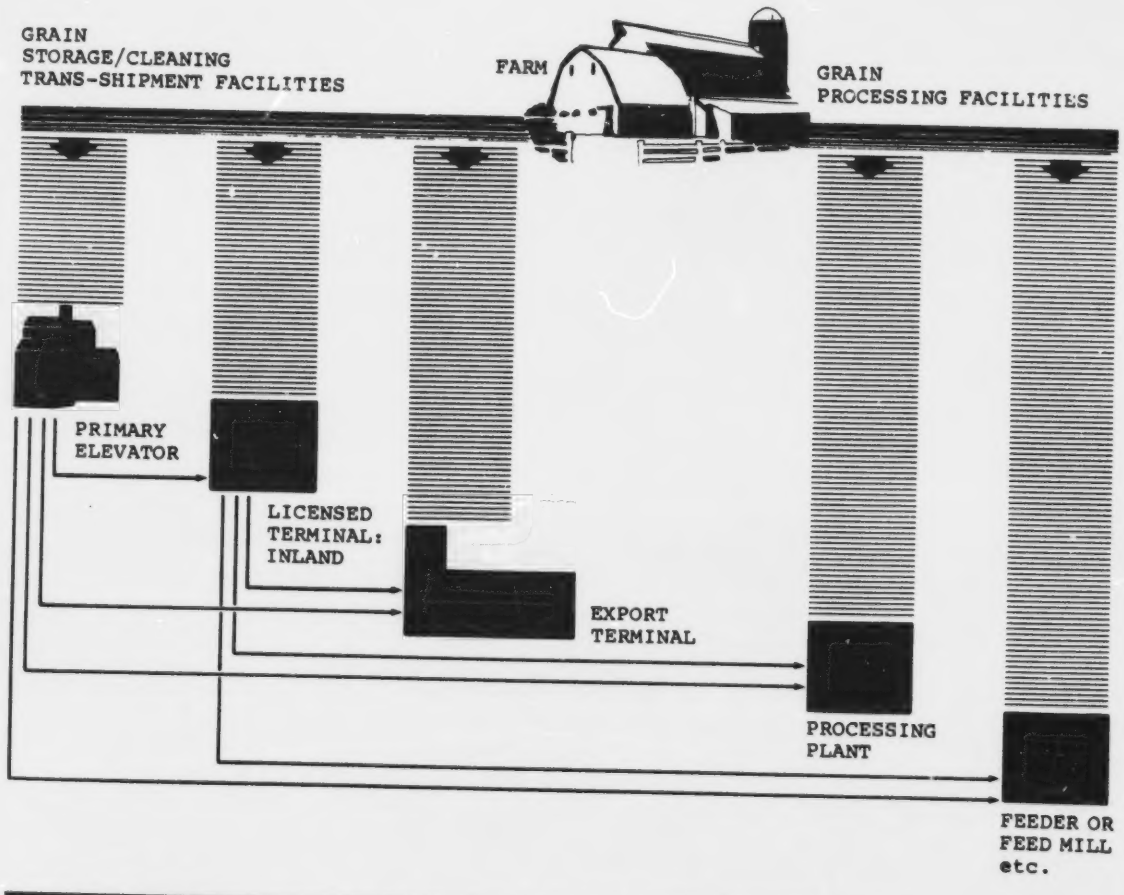
4.3 Characterization of the Origin-Destination Pattern of Grain Flows by Commercial Truck

Figure 4.1 presents a schematic representation of the origin-destination pattern of grain flows of relevance to commercial grain trucking in western Canada. Two basic categories of movement are illustrated:

(i) shipments which originate on the farm, classified here as 'primary movements'; and

FIGURE 4.1

SCHEMATIC OF ORIGIN - DESTINATION PATTERN FOR GRAIN FLOWS BY COMMERCIAL TRUCK



(ii) shipments which originate at a location other than a farm, classified here as 'secondary movements'.

Within Canada, and of relevance here, both primary and secondary movements can be shipped to one of four basic categories of destinations:

Licensed Primary Elevators: These include some 3 000 normal 'country' elevators and high through-put elevators (including Cargill's Rosetown and Elm Creek facilities and the Weyburn terminal) scattered throughout the Prairie region. Their principal purpose is to store and transship grain delivered directly from producers.

Licensed Terminal Elevators: These include both the so-called 'inland' terminals (of which there are five, located at Saskatoon, Moose Jaw, Calgary, Edmonton and Lethbridge) and export-position terminals. Grain is officially inspected both in-bound and out-bound at these terminals. As well, these facilities are used for cleaning, storage, treatment and transshipment.

Licensed Process Elevators: These comprise facilities where grain is manufactured or processed into another product, such as vegetable oil, malt or flour.

Unlicensed Receiving Points: These include facilities such as feeders, feed lots, feed mills and seed preparation and distribution facilities.

In isolated circumstances, not illustrated in the schematic, primary movements may be made in commercial grain trucks to 'producer cars', and secondary movements may occur between primary elevators or between terminal elevators.

Movement categories to/from the United States from/to the Prairie region can also be represented by the same schematic, although the specific Canadian terminology (e.g., 'licensed process elevator') is not directly applicable in the U.S.

From the trucking standpoint, it is useful to recognize two other dimensions in characterizing origin-destination patterns, namely 'intraprovincial vs. extraprovincial movements' and 'shipment distance'.

The intra vs. extra distinction is of some importance in that the nature of the regulatory environment governing the two types of operations is, in both a de jure and de facto sense, somewhat different. Intraprovincially, for all practical purposes, commercial grain trucking is unregulated. Literally hundreds of carriers in each province (and thousands of farmers

are included) could be engaged in commercial grain hauling (and in particular, primary intraprovincial movements) at whatever prices they deemed appropriate. On the other hand, extraprovincial for-hire grain trucking to, from and within the Prairie region is (in a de jure sense and in varying degrees a de facto sense) regulated from the standpoint of entry control (although un-regulated from the standpoint of rates). To this effect, a currently un-authorized operator would face substantial opposition in attempting to acquire (say) un-restricted extraprovincial grain authorities within the region. This is a somewhat peculiar type of authority control when it is recognized that at the same time there is a 'bank' of un-exercised extra-provincial grain authorities held by existing (non-grain) carriers which could be activated at a moment's notice.

The 'shipment distance' dimension is also of practical consequence to the commercial trucker, in that it has a lot to do with the costs of individual movements, and modal competitiveness. Three distinct distance categories have been identified:

Local Hauls: always less than about 50 miles in length, and more generally in the 5-25 mile range.

Movement requirements in this shipment length category are nearly always primary and intraprovincial in nature, and would be principally destined for country elevators. The commercial carrier is in direct competition with private carriage (by the farmer), and custom-trucking (neighbours hauling for neighbours).

A commercial truck engaged in this type of haul spends the vast majority of its total trip time in 'stem' time (getting to the origin), loading time at the farm, and unloading time at the destination. Loaded travel time is minimal. The potential for backhauls is almost non-existent.

Given these attributes of hauls of this distance, commercial truckers generally assess per load - minimum type charges for these hauls. (Rate schedules are examined in detail in Chapter 5.)

Mid-length Hauls: typically in the 50-200 mile length range.

Primary and secondary movements are involved, principally on an intraprovincial basis. Licensed process elevators, inland terminals and unlicensed facilities, as distinct from country elevators, dominate as destinations. Private farm trucking is not a significant competitor, although private haul by the

consignee (e.g., the processing plant) exists. In very isolated circumstances, rail may compete.

Non-board grains would account for a significant portion of the commodity movement handled in this shipment distance range. Certain of these commodities are grown under contract between the consignee and the farmer.

The potential for backhaul appears to be relatively minor. Rate schedules appear to make allowances for some backhaul and are usually on a per-mile (or equivalent) basis.

Long-distance Hauls: typically greater than 200 miles in length, often in the 400-500 mile length range within the Prairie region, and reportedly up to 1 500 miles in length (to export positions in Canada and to/from the United States).

Primary and secondary movements are involved, principally on an extraprovincial basis. Destinations include both processing and terminal facilities.

Private trucking by producers or consignees would typically not compete for these hauls. Rail, however, is an obvious competitor, particularly for the very long (say more than 500-700 mile) hauls.

Balanced loading is generally essential for economic operation. Thus, long-haul grain haulers are often involved in fertilizer movement. Typical long-haul operations include:

(i) potash haul to the United States, returning with feed grains (corn and soybean meal);

(ii) feed grains and special crops from Saskatchewan (and to a lesser extent, Manitoba) to Alberta, returning with fertilizer;

(iii) off-board, specialized crops to Vancouver, returning with lumber to Alberta (using 'convertible' trailers) and possibly fertilizer to Saskatchewan; and

(iv) one-way, spot-market movements to Thunder Bay.

Generally, rate schedules envisage substantially balanced hauls in long-haul operations.

To assist in achieving balanced operations, a for-hire trucker may purchase grain (or fertilizer for that

matter) on backhaul movements associated with long-distance hauls. To this effect, a number of the Prairie region's larger commercial grain trucking firms are also licensed by the Canadian Grain Commission as grain dealers.

This general characterization of the origin-destination pattern of grain flows relevant to western Canadian commercial grain trucking is referenced in subsequent sections relating to the industry makeup and operating characteristics.

4.4 Industry Fluidity

The following sections present and assess information developed in the course of this work respecting western Canadian commercial grain truckers, their fleets, and key operations characteristics.

This information must be viewed from the perspective that there can be, and has been, substantial fluidity in the makeup of the industry. To this effect, equipment moves between for-hire carriers, between for-hire and private carriage, into and out of grain trucking (i.e., the tractors), and between the road and the parking lot.

Leased operation is common throughout the industry, both for trailers and most particularly tractors. Thus, so-called large commercial grain carriers might often be more appropriately classified as equipment and trip or contract brokers. While they will typically have some of their own equipment, much of their fleet is leased, and can be, and is, turned on and off in accordance with the business that they have at any point in time.

Examples of this fluidity are evident in the following observations:

(i) One 'large' Saskatchewan-domiciled carrier has 20 hopper-bottom trailers in his fleet today, versus 2 as of 6 months ago. The majority of this equipment is leased;

(ii) One 'large' Manitoba-domiciled carrier was heavily involved in commercial grain trucking two or three years ago, is currently effectively uninvolved, but advises that he could and would re-enter the business in a meaningful way 'in a matter of months if the price was right'; and

(iii) There is currently wide-scale under-utilization of the existing fleet of equipment available for commercial grain trucking in the Prairie region. Several operators indicated their desire to

> dispore of their equipment, and leave the business. Thus, while they are 'here today', they might well be 'gone tomorrow'.

This fluidity in industry makeup makes it difficult to profile the industry at any point in time, and more importantly, necessitates particular care in drawing inferences from the material obtained. The following material is presented with these limitations in mind.

4.5 Commercial Grain Truckers: Alberta-Domiciled

4.5.1 Carriers

As discussed in Chapter 2, intraprovincial for-hire trucking in Alberta is effectively unregulated. This means that there are potentially an unlimited number of commercial grain truckers in Alberta, and further, that these carriers cannot be identified from Motor Transport Board records or authorities. Extraprovincially, for-hire grain trucking is regulated. The list of authorities obtained from Alberta - authorizing extraprovincial movements of grain or grain products, with various conditions attached - is extensive. From the information provided by the Motor Transport Board, there would appear to be something in the order of 120 extraprovincial authorities which explicitly contain the word "grain".[1]

To develop a list of commercial grain truckers in Alberta, the following sources were used: i) list of carriers (and equipment) provided by the Alberta Wheat Pool; ii) list of carriers (and equipment) provided by NARP Processors Ltd.; iii) list of carriers provided by the Alberta Trucking Association; iv) the aforementioned extraprovincial authorities; v) various information (e.g., advertisements, etc.) contained in the Alberta Motor Transport Directory; and, vi) a wide variety of information provided by other contacts (carriers, consignees, etc.).[2]

Based on these sources, 84 commercial grain truckers were identified; however, three qualifications to this figure of 84 carriers must be noted. First, several of the major consignors/consignees suggested that the actual number of commercial grain truckers in the province was probably in the range of 80 to 100. Second, all sources agreed that this list of commercial grain truckers did not account for the one or two truck operators (i.e., farmers who may be engaged in "custom trucking " without necessarily operating with PSV equipment, and owner-operators who may from time-to-time work for one of the 84 carriers, a private shipper, or independently). Third, during the process of contacting a sample of the 84 carriers, a total of 11 were eliminated by either being told that the telephone number was no longer in service or, on making contact, by being told that the trucking company no longer hauled grain.

Of the 84 carriers on the original list, contacts were attempted with 33 (starting from the 'top', or 'believed to be major'): 11 were eliminated; 1 refused to provide information; and 21 provided useful information.

4.5.2 Equipment

Table 4.1 presents a summary of the estimated fleet of hopper-bottom units operated by Alberta-domiciled carriers.

Line 1 of this table shows the information given by the 21 carriers that provided information; line 2 shows the information on carriers that have been identified and for which equipment information was obtained from others (the Alberta Wheat Pool and NARP Processors Ltd.)[3]; line 3 shows the information known about the remaining 18 identified carriers; and line 4 has been included simply to bring the total number of carriers up to the range of 80 to 100.

In addition to the carriers and equipment shown in Table 4.1, it is known that there are other one to two truck operators in Alberta. No reliable method for estimating the number of these carriers or the amount of equipment operated has been found.

Table 4.1

HOPPER-BOTTOM FLEET
ALBERTA-DOMICILED CARRIERS
- Winter 1982/83 -

	No. of Carriers	Hopper-Bottom Units			
		Semis	A-Trains	B-Trains	Total
1. Identified carriers; contacted	21	74	11	30	115
2. Identified carriers; estimates provided by others	34	56	23		79
Sub-total	55	130	64		194
3. Identified carriers; no estimates provided	18	?	?		?
4. Other carriers	7-27	?	?		?

The total estimated fleet of commercial hopper-bottom trailers in Alberta (used for grain hauling) is in the range of 270 to 380. This estimate is based on the following:

(i) 115 units positively identified;

(ii) 79 units identified by the Alberta Wheat Pool and/or NARP Processors;

(iii) an estimate of 2 to 3 units per carrier for the 25 to 45 carriers shown on lines 3 and 4 of Table 4.1, for a total of 50 to 135 units. (The average number of units for carriers on lines 1 and 2 is 3.5; it is believed that the carriers on lines 3 and 4 would, on an average, be somewhat smaller;) and

(iv) an assumption that the unidentified one to two-truck operators might account for another 25 to 50 units which are used either full or part-time for commercial grain hauling. No Alberta source could provide any estimate for these operators, as often that nature of their operation is difficult to identify (i.e., it is sometimes difficult to know when a movement constitutes "for-hire" transportation).

From the information shown on lines 1 and 2 of Table 4.1, it is evident that a significant proportion of the Alberta fleet (about one-third) is operated in train units. (This estimate of one-third should not be extrapolated to the total fleet estimate of 270-380, as the proportion of trains in the unidentified fleet is likely to be lower.) Further, it would appear that something in the order of three-quarters of these units are B-Trains.

The tractor-semi-trailer units, which dominate the fleet, are typically 40 feet long semi-trailers: 54 of the 74 units identified on line 1 were 40 feet; 13 were shorter (38 feet); and, 7 were longer (42 feet). Most carriers reported these units handling "25 ton" (22.7 tonne) loads; although several reported slightly higher payloads. The most common B-Train configuration was two 26-foot semi-trailers. There was no "common" A-Train configuration: lead semi-trailers ranged from 32 feet up to (a reported) 40 feet; and second-trailer units were reported anywhere from 16 to 20 feet long. The average reported payload for all trains was 34.6 tonnes, with the highest reported payload at 38 tonnes and the lowest at 32.7 tonnes. (It should be borne in mind that all payload information was obtained from carriers over the telephone responding to a question on "typical" payloads for their various types of equipment.)

Of the 115 units reported in line 1 of Table 4.1, 11 were "convertibles". That is, these hopper-bottom trailers could be converted (by folding sides down) to "flat decks". Typically, these were being used on hauls into British Columbia, where steel or lumber products were backhauled.

Finally, it might be noted that in addition to the equipment reported and shown on Table 4.1, there were about 7 to 8 "end dumps" being used full-time by these carriers for commercial grain hauling. (There also was some miscellaneous other types of equipment that are not significant to note here.)

4.5.3 Operating Characteristics

The opinions and estimates provided by the contacted carriers are a valuable source of information on some of the operating characteristics of commercial grain truckers.

Of the 20 carriers for which information (on "area of operation") was obtained, and considering grain movements only (i.e., not "total" authority), 12 hauled grain only intraprovincially, 4 hauled grain both within Alberta and between Alberta and British Columbia (some also had intra-B.C. authorities), 2 hauled grain both within Alberta and between Alberta and provinces to the east, 1 hauled grain within Alberta and between Alberta and other Canadian provinces and the American states, and 1 hauled only extraprovincially (including internationally).

For the 19 carriers able to estimate "annual loads of grain", there were a reported 11 108 loads carried. One of these firms is so unique that, for meaningful utilization figures, it has to be described separately. Briefly, this firm is a contract hauler with several hopper-bottom units on a dedicated haul for 10 months of the year. These units averaged 650 loads/trailer/year, or about 76 000 km/trailer/year. (This does not include any "extra" work for the two remaining months of the year.) This carrier ran its equipment 50% loaded and 50% empty. With an average length of haul of 35 miles and an average rate of $5.06/tonne, this "dedicated local hauling" situation is costing the shipper about 13.8¢/bushel (i.e., roughly $180 per load divided by 1 280 to 1 300 bushels of wheat.) "Annualizing" this carrier's ten-month operation, the following utilization rates are indicated: about 91 000 km/trailer/year; 780 loads/trailer/year; 1 million bushels/trailer/year; or, $140 thousand in revenues/trailer/year. (These are potential, not actual, utilization measures.)

Excluding this one special case, the remaining 18 carriers handled 8 508 loads of grain with 97 hopper-bottom (and other) units.[4] The average number of grain loads per carrier was 473 and the average per operating unit was 88. These averages disguise some marked differences among the carriers. A total of

9 of these 18 carriers reported less than 40 loads/trailer/year (48 trailer-units). Only 5 of the carriers (31 units) reported more than 150 loads/trailer/year. (The highest was 222 loads/trailer/year, although this was a "soft" estimate on the part of the responding carrier.)

In considering these utilization rates, two points must be borne in mind: (i) 1982 was a "poor" year, and (ii) much of this equipment was also used to haul other dry-bulk freight (primarily fertilizer).

In terms of average annual distance per unit, it was only possible to develop information for three carriers: (i) the previously described special case ("dedicated local hauling") which, on an annualized basis suggests 91 000 km/trailer/year, with slightly over 50% empty; (ii) an intra-Alberta and Alberta-Saskatchewan carrier (5 units) that averaged 51 000 km/trailer/year (all commodities), with 15% empty miles (on the interprovincial haul, the carrier was moving grain into Saskatchewan and bringing salt back); and (iii) one Alberta-U.S. and Alberta-B.C. carrier (3 units) averaging 118 000 km/trailer/year (all commodities), with no empty miles (grain to B.C., steel back; lumber to southern U.S., corn back).

The impression gained from other carriers was that many of these units were operating at fairly low average annual kilometres. (Again, this was generally attributed to the "poor" year.)

In terms of information on backhauls, little quantifiable information was obtained. The opinions offered suggested that most of the extraprovincial hauls were loaded both ways, whereas probably less than 50% of the intraprovincial hauls had a return load. (The opinions on intraprovincial hauls varied considerably: some carriers were always empty on the backhaul; some were full both ways when fertilizer and grain were both moving, etc.)

Several sources suggested that generalization on seasonality was dangerous. While everyone agreed that there were busy seasons for fertilizer (spring and fall), there was little consensus on when busy seasons on grain occurred (although quite a few indicated the fall) or just what factors contributed to the "ups and down" of the grain hauling business.

It can be inferred from these comments that there are clearly sharp swings in the demand for commercial grain hauling, without being sure that the changing demand patterns necessarily coincide with a particular season every year.

Although it was not possible to obtain commodity information from every carrier, it would appear that the Alberta carriers haul a wide variety of grains and grain products: in

particular, it appears that the majority of 11 108 loads were non-Board grains. Most of the movements were primary (i.e., off the farm), and most of the destinations were other than primary elevators (e.g., processing plants, mills, terminals).

4.6 Commercial Grain Truckers: Saskatchewan-Domiciled

4.6.1 Carriers

As discussed in Chapter 2, intraprovincial commercial grain hauling in Saskatchewan is effectively unregulated. The result is that there are literally hundreds of carriers that can be considered "potential" grain haulers (given acquisition of the necessary equipment). Extraprovincially, commercial grain hauling is regulated. However, in discussions with the Saskatchewan Highway Traffic Board, there appears to be something in the order of 80 to 90 existing authorities. The effect of this situation (i.e., no regulation intraprovincially, a large bank of authorities extraprovincially) is that a list of actual commercial grain haulers cannot be drawn up from authority records. Further, insurance records, vehicle registration records, and trucking association membership records are also unsatisfactory.

For this study, a list of commercial grain haulers has been compiled from information supplied by the Highway Traffic Board (which has undertaken some studies of its own on the subject), information supplied by several major shippers/consignees, and with the help of a half dozen or so major carriers. In total, a list of 40 commercial grain haulers has been compiled, of which 23 have been contacted.[5] (The procedure used to contact these carriers was to start at the 'top', or the 'believed to be major'.) It is known, however, that in addition to these 40 carriers there is a large number of small one or two-truck operators that have not been identified - possibly as many as 100 to 150 (as is discussed in the next section).

Some further observations and/or qualifications to this list of carriers are as follows:

(i) one large carrier with 42 bottom-dump trailers has been excluded. This carrier (head office in Winnipeg) is engaged exclusively in potash hauling and, although it is understood that these specially-designed trailers could be used to haul grain, it was decided that it would not be appropriate to consider this a grain hauling operation; and

(ii) the small one or two-truck operators that have not been identified are sometimes difficult to categorize: they may operate as private carriers

(many own farms), they may operate as owner-operators (the larger carriers that have been identified have a large pool of owner-operators from which to draw), and they may operate as small commercial truckers (for part of the year).[6]

4.6.2 Equipment

Table 4.2 presents a summary of the hopper-bottom equipment operated by the 40 Saskatchewan commercial grain haulers.

Estimates of the total hopper-bottom fleet have been provided by two sources (one of the larger carriers and one of the grain companies). Although there is - of necessity - some guesswork in this estimate (the fluidity problem), both sources agreed that the total fleet would be in the range of 425 to 475 units.[7] Accepting this estimate, the present study has identified about two-thirds of this fleet. This suggests that there are about 100 to 150 operators (i.e., 138 to 164 units owned by one or two-truck operators) not shown in Table 4.2.

The existence of these possibly 100 to 150 small "carriers" requires some explanation. The best way of doing this is to describe the situation of one of the large carriers that has been contacted (and which is included on line 1 of Table 4.2). In 1980, this larger carrier had 80 hopper-bottom units fully employed (hauling over 7 million bushels of grain).

Table 4.2

HOPPER-BOTTOM FLEET
SASKATCHEWAN-DOMICILED CARRIERS
- Winter 1982/83 -

	No. of	Hopper-Bottom Units			
	Carriers	Semis	A-Trains	B-Trains	Total
1. Identified carriers: contacted	23	118	76	15	209
2. Identified carriers; estimates provided by others	17	?	?	?	78-102
Sub-total	40				287-311
4. Other carriers	?	?	?	?	?

On Table 4.2, this carrier is included with 20 units. The balance (60) are, in essence, a major component of the 138 to 164 units not identified on the table. According to this firm, these 60 units are owned by small one or two-truck operators (often farmers) who work both for the larger carriers or on their own (or possibly not at all) depending on the market. In effect, then the small operators not shown on the table may or may not be considered commercial grain haulers (it would depend on when a survey was being conducted).

From Table 4.2, it is evident that trains - primarily A-Trains -comprise a significant proportion (44%) of the total known Saskatchewan fleet. However, this proportion would be lower if details on the total fleet of 450 units were available. In any case, and given that most of the train units have been identified in all three provinces, train units play a more dominant role in Saskatchewan - both in relative terms and in absolute numbers - than in either of the other two provinces.

One other feature of Saskatchewan fleets is that the average number of units operated per firm (roughly 7.5) is higher than either Alberta or Manitoba. The average number of units per carrier is somewhat dependent on the way carriers were sampled in each province, so simple comparisons of averages should not be made. What is more revealing is that in Saskatchewan there were 8 carriers reporting a dozen or more units, and 5 reporting 20 or more. In both Alberta and Manitoba there is only one firm reporting 20 or more units.

The typical combined trailer lengths for trains in Saskatchewan are 48 to 50 feet and the typical payload was reported at 33 to 36 tonnes. Tractor-semi-trailer units were generally 38 to 42 feet in length (semi-trailers) and generally carried payloads of 23 tonnes.

In addition to the information shown on Table 4.2, four of the semis are "convertibles" or "western convertibles" (see the description in Section 4.5.2). Also, not included in the equipment shown on the table, was one "truck plus trailer" unit ('category 1 truck' as described in Chapter 3), and 30 vans being used to haul grain. (The 30 vans are a special case.[8])

4.6.3 Operating Characteristics

Almost all of the information obtained from the 23 carriers contacted on operating characteristics is based on the opinions and estimates of the owners.

For the 23 carriers, and considering "area of operation" in terms of where grain was actually hauled in 1982 (and not from an authority perspective), there were: 16 carriers operating intraprovincially (4 were only intraprovincial); 19 operating extraprovincially (5 were almost exclusively

extraprovincial); 17 operating from/to Saskatchewan to/from western provinces (4 as far as British Columbia); 5 operating from/to Saskatchewan to/from eastern provinces (none as far as Ontario); and, 10 operating from/to Saskatchewan to/from the United States. Four of the carriers operated in all four areas (intra, west, east, and south).

Only spotty information could be obtained on annual loads (and, therefore, cannot be reported here). However, in terms of annual distance, 14 of the carriers could provide estimates of total annual kilometres. (This is for all dry bulk hauling, not just grain.) These carriers, with 437 units, totalled just over 17.5 million kilometres for an average of 129 thousand per hopper-bottom unit. Three of the carriers, with 32 units, reported less than 100 thousand kilometres per unit: one of these carriers (20 units) reported an average of only 80 000 km. Six carriers, with 49 hopper-bottom units, reported averages of 160 000 km (or a bit higher) for 1982.

For 15 of the carriers reporting on backhauls, 7 were almost totally empty on all backhauls. These 7 carriers were primarily intraprovincial haulers (5 of the 7) or else were hauling very short distances extraprovincially (e.g., to the crushing plant in Lloydminster). Five other carriers reported less than 25% empty backhaul miles (12.5% total miles) on all operations. These five were all extraprovincial haulers. In the middle of these two groups (i.e., 7 hauling empty and 5 hauling generally full on backhauls), there was a range of experience. However, when the carrier-total figures for this middle group are broken down into intra and extraprovincial business, they confirm that generally much of the intraprovincial business is done on the basis of empty backhauls and that most of the extraprovincial business is done on the basis of loaded backhauls. There are qualifications to this generalization: extraprovincial haulers do experience some empty "cross haul" miles; the extraprovincial carriers hauling rapeseed into Lloydminster are empty on their backhauls; and there are some intraprovincial hauls where there are loads both ways.

Opinions differed on seasonality: it appears that most of these differences are related to the particular type of grains handled, the area of operation, and the involvement with fertilizer hauling (which does peak in the spring and fall). Several carriers reported some peaking in certain seasons for some types of grain (at least two reported rapeseed is "slow" in the summer and "heavy" in the fall). One carrier (seven units) that reported an "excellent" year in 1982 (they are planning to acquire five more units), and which reported a steady movement of grain throughout the year, attributed their success to the fact that the area in which they operated produced a variety of grains. In effect, as the demand for hauling one type of grain rose or fell, the demand for hauling some other type of grain moved in the opposite direction.

Primary hauls dominate the grain movements for Saskatchewan-domiciled carriers; for 140 hopper-bottom units on which it was possible to identify the type of moves, 111 (79%) were mainly engaged in primary hauls. The principal destinations were the licensed process elevators, licensed (inland) terminals, and high through-put elevators in Weyburn and Rosetown. Few of the carriers contacted indicated any involvement in the primary, short-haul movements to country elevators.

In terms of commodities, 18 of the 23 contacted carriers were involved in fertilizer (including potash) hauling. For one or two carriers, the total amount of fertilizer hauled equalled the amount of grain. As for individual grains:

(i) 16 carriers, operating 136 hopper-bottom units, were hauling rapeseed. For a half dozen carriers, this was the major haul. Typically, rapeseed moves in the range of up to 240 km haul lengths, with commercial grain truckers generally used in the over 50 km range. (Farmers tend to use their own trucks on shorter hauls.) This is a primary movement hauled to either crushing plants or (inland) terminals for export;

(ii) 5 carriers with 53 units, were involved with some rye and flax. Most of this is primary movements;

(iii) 6 carriers, with 88 units, were hauling wheat, principally into mills;

(iv) 8 carriers, with 75 units, were hauling barley. This is dominated by primary moves into Biggar (malting), within a 160 km radius;

(v) 5 carriers, with 62 units, were hauling corn and/or soyameal from the United States into Saskatchewan (some corn was also moving in from southern Manitoba.) Typically, this was being hauled in over 800 km distances, with fertilizer, potash, and some speciality grains (e.g., mustard) moving in the opposite direction;

(vi) 9 carriers, with 107 units, were hauling various speciality grains (e.g., canary, mustard, lentils, etc.). This grain is generally moved to licensed terminals (Saskatoon, Moose Jaw) and high through-put elevators; and

(vii) in addition, some carriers were involved in other miscellaneous grain hauling, including seed, oats, feed, feed grains, etc.

With the exception of rapeseed hauling, most carriers reported average length of hauls on intraprovincial movements in the range of 80 to 300 kilometres. On extraprovincial movements, average length of haul was typically over 600 kilometres.

4.7 Commercial Grain Truckers: Manitoba-Domiciled

4.7.1 Carriers

As discussed in Chapter 2, the primary movement of grain by for-hire trucks in Manitoba is not regulated - either intra or extraprovincially. Secondary movements, on the other hand, are regulated (i.e., operating authorities are required). From the description of authorities contained in the Manitoba Ship-By-Truck Directory, there appears to be well over 100 carriers with some type of grain authority. Given both the unregulated nature of the industry (i.e., primary moves) and the wide bank of existing authorities (i.e., secondary moves), it is not possible to develop any meaningful list of commercial grain truckers in Manitoba on the basis of information derived solely from authority records.

To compile a list of carriers, information was obtained from several industry sources (in particular, one transportation broker in Winnipeg and one major shipper/carrier), from an earlier (small-scale) survey, and from various other sources (e.g., advertisements, information supplied by contacted carriers).

Given Manitoba's regulatory system (and associated vehicle registration system), it is best to consider this list of grain truckers in three groups:

> Rural general freight carriers: These carriers serve the smaller communities to or from Winnipeg (and sometimes other centres). A total of 32 of these carriers has been identified as being engaged in commercial grain trucking in 1982, and 18 have been contacted by telephone. It should be noted that the precise number of these carriers involved in commercial grain trucking at any point in time may be higher or lower than 32 as, in effect, these carriers can get in or out of the market as rapidly as the time required to buy (or lease) a trailer. (Their power equipment has alternative uses;)
>
> "Other PSV": The second group will be labelled here as "other PSV", although this term is a misnomer: some of these carriers also have general freight authorities (but they are not primarily rural general freight carriers); and some of the carriers in the third group may also operate some PSV equipment (but are typically engaged in some activity other than trucking). The

distinguishing characteristic of this "other PSV" group is that they are "full-time" trucking companies who are (or, depending on markets, may be) "full-time" commercial grain truckers. A total of 26 such carriers has been identified, and 10 have been contacted; and

"Other Carriers": The third group is "all other" carriers that may be hauling grain commercially with equipment registered as PSV, CT, T, or Farm. Generally, this third group is involved in some other commercial activity, other than "for-hire trucking" (e.g., farming, processing, farm supply, grain dealer, etc.).

This is the most difficult group with which to deal as, at any given point in time, a good number may not actually be engaged in commercial grain trucking. Rather, they may simply own a hopper-bottom trailer which they use primarily for their own purposes (i.e., private trucking). As the opportunity arises, or as market conditions change, (given Manitoba's regulatory system) these "potential" carriers are attracted into the business of commercial grain hauling (primary moves). A total of 45 carriers has been identified in this third group, with most of the information supplied by carriers in the first group ("who else is hauling grain commercially in your area?"), or consignors/consignees (seed mills, processing plants, etc.).

Of these 45, 30 were believed to be operating on Farm plates,[9] and most of the rest on CT plates. There was a certain amount of confusion as to whether or not anyone in this group was actually operating with a T-plate (some believed these vehicles could only be used locally; others believed the effect of the exemption on primary grain hauling - see Chapter 2 - permitted them to use these vehicles on longer trips, including international and interprovincial[10]). Although no PSV authorities have been positively identified in this third group of carriers, it is possible that a carrier within this group would apply for (and possibly be granted) a PSV authority in order to participate in secondary grain movement.

Three of the 45 carriers in this group have been contacted.

To summarize, a total of 103 carriers has been identified as commercial grain truckers at some point during 1982; 31 of these have been contacted. (As in the other two provinces, the method used to select carriers to be contacted was to start at the 'top' of the list.) It is known that there are

other carriers that have not been identified and that could have been included in the third group; but, it is also known (given the market for commercial grain trucking in 1982) that it may be somewhat inaccurate to say that these 103-plus carriers were all engaged in commercial grain trucking at any one time in 1982. At best, it can be estimated that there are over 100 Manitoba commercial grain truckers, with a good proportion of these carriers more accurately characterized as "potential" commercial truckers in a "slow" year. In a "good" year, on the other hand - and given the bank of unexercised authority and the effect of the grain exemption - this group of 100 or so carriers could expand as rapidly as equipment could be obtained.

4.7.2 Equipment

Table 4.3 summarizes the available information on hopper-bottom equipment operated by Manitoba commercial grain carriers.

Lines 1, 2 and 3 correspond to the three groups of carriers discussed in the previous section. Each of these lines, in turn, has been sub-divided into a) equipment verified by the contact firms, b) equipment indicated by other sources, and c) other identified carriers where no information on equipment has been obtained. (It will be noted that where it was impossible to correctly identify the type of equipment operated, the columns - "semis", "A-Trains", and "B-Trains" have been combined.)

The total Manitoba fleet of hopper-bottom equipment is estimated at between 280 to 320 on the basis of the following:

(i) information supplied by one transportation broker in Winnipeg suggested that there might be up to 175 hopper-bottom trailers being used commercially[11] by Manitoba-domiciled carriers. Alternatively, one of the major grain companies (who also acted as a carrier with 13 units) estimated the total - that is, both "commercial" for-hire and private - fleet at between 280 to 320; and

(ii) given Manitoba's regulatory system (i.e., any hopper-bottom trailer could become a for-hire vehicle "instantaneously"), given that 203-210 units have been identified as being used commercially at some time in 1982 (although quite possibly not all at the same time), and given the "identified" carriers in Table 4.3 with no estimates for equipment, it seems reasonable to select the higher of these two estimates (i.e., 280 to 320) for the total estimate of commercial hopper-bottom units. (In effect, then, this

Table 4.3

HOPPER-BOTTOM FLEET
MANITOBA-DOMICILED CARRIERS
- WINTER 1982/83 -

	No. of Carriers	Hopper-Bottom Units			
		Semis	A-Trains	B-Trains	Total
1. PSV - rural general freight:					
a) contacted	18	35			35
b) identified, estimate provided by others	7	7-8			7-8
c) identified, no estimate	7				?
Sub-total	32	42-43			42-43
2. PSV - other					
a) contacted	10	61	16	2	79
b) identified, estimate provided by others	12	38-43	14	0	52-57
c) identified, no estimate	4				?
Sub-total	26	99-104	30	2	131-136
3. Other (PSV, CT, T, Farm)					
a) contacted	3	10	3	2	15
b) identified, estimate provided by others	5		15-16		15-16
c) identified, no estimate	37				?
Sub-total	45				30-31
TOTAL (1,2,3)	103				203-210
4. Other (PSV, CT, T, Farm) - not identified	?				?

estimate is attributing 77 to 110 units to lines 1(c), 2(c), 3(c), and 4 in Table 4.3.).

From Table 4.3 (and excluding equipment where it was not possible to properly identify configurations), it appears that less than one-fifth of the Manitoba fleet are train units (i.e., 37 out of 188-194). If the unidentified fleet could be added, this ratio would be lower; that is, most of the unidentified fleet would be tractor-semi-trailer units. Further, it is clear that A-Trains dominate (i.e., 33 out of 37).

The tractor-semi-trailer units which dominate the fleet (well over 80% if unidentified equipment were added) are typically 40 feet in length. Although complete information was not obtained on all semi-trailers, there were only about a dozen reported longer (at 42 feet), and only five reported shorter. Some of the shortest (34 feet) were either used with "extenders" (i.e., wooden additions to sides to enable the same payloads as longer trailers) or had been purchased in anticipation of converting to train units.

The typical payload reported for semi-trailer units was "25 tons" (22.7 tonne); although a few reported slightly higher and a few (hauling sunflowers) reported lower. The train units were generally described as carrying payloads in the range of 33.6 tonnes.

In addition to the equipment shown on Table 4.3, there were five 'end dumps' being used to haul grain commercially and one "potato trailer" (it is understood to be a trailer with an unloading belt mechanism).

4.7.3 Operating Characteristics

Most of the information obtained on operating characteristics is based on opinions and estimates offered by contacted firms: only one or two carriers, maintained the necessary records for "harder" data.

For 27 reporting carriers, 21 operated intraprovincially (10 operated "only" intraprovincially), 7 operated between Manitoba and the western provinces, 4 operated between Manitoba and Ontario, and 15 operated between Manitoba and the United States. (These figures sum to more than 27 as obviously, some carriers operate in several areas. Further, this is an account of where carriers actually operated in grain hauling in 1982 - not where authorities were held.)

It might also be noted that only 1 of the 27 carriers operated in all four areas (intraprovincially, to the western provinces, to Ontario, and to the United States), and that 6 of the 27 carriers operated only extraprovincially.

In an attempt to relate actual grain flows to areas of operation, it was possible to estimate annual loads hauled in four areas for 23 carriers. Of the 9 029 loads reported by these carriers, 2 598 (29%) were intraprovincial, 400 (4%) were on the Manitoba-western provinces lane, 200 (2%) were Manitoba to Ontario, and 5 831 (65%) were between Manitoba and the United States (both directions). While these figures are quite revealing, one qualification must be noted. Specifically, few Manitoba carriers were able to estimate the annual loads of purely local grain hauling (i.e., primary moves to a country elevator). Therefore, these figures tend to underestimate one component of intraprovincial business.[12] (Most of the reported intraprovincial loads were primary moves destined to such places as processing plants, high through-put elevators handling specialty crops, etc.)

For 22 reporting carriers (a slightly different mix from the 23 reporting loads by area of operation), 9 205 loads were handled in 1982 by 80 hopper-bottom units. (Again, some purely local hauling loads have been overlooked in these figures.) This suggests an average of 115 loads/trailer/year. However, there are sharp differences among various carriers on this average utilization rate: 2 carriers reported 20 loads/trailer/year, 6 reported between 20 and 70 loads/trailer/year, 9 reported between 70 and 150, and 5 reported over 150 (the highest being 267 loads/trailer/year).

These utilization rates are based on grain hauling only; most carriers reported 1982 as a "slow" year, and many carriers were using this equipment for other dry-bulk hauling.

In terms of average annual distance per hopper-bottom unit (again, on grain hauling only), 11 carriers reported 3.7 million kilometres for 41 units. The average is about 91 000 km/trailer/year. One carrier that hauls only grain on the Manitoba-United States lane - and who was more-or-less "fully employed" in 1982 - averaged 189 000 km per unit (4 units), where the average length of haul was about 800 km. One other large carrier (not included in the previous figures for 11 carriers), operated 3.1 million kilometres for all hauling (i.e, more than just its grain business) and, with 22 units, averaged 142 000 km per unit.

In terms of backhauls, all carriers reported the local hauling as always empty one-way, most carriers reported the longer intraprovincial hauls as generally empty one-way, and most of the extraprovincial haulers (the exception being Manitoba-Ontario) were generally full both ways. However, these extraprovincial haulers often reported 10% to 15% of their total miles as empty owing to "cross-hauls" (i.e., moving the unit to a position where a backhaul could be found).

For 17 of the reporting carriers, representing 8 024 loads, a total of 1 585 (20%) loads of grain were reported as occurring with no backhauls. Almost all of these loads were intraprovincial.

No good information was obtained on seasonality. The general impression was that there are sharp swings in the demand for commercial grain trucking, but that these swings do not necessarily occur in the same season every year. (It is true, however, that hopper-bottom equipment tends to be busier in the spring and fall because of fertilizer movements.)

As for the type of moves, for 21 carriers reporting 9 092 loads, approximately 42% were estimated to be primary. (There are some crude estimates contained in these figures.)

For 16 carriers and 5 503 loads, it was possible to subdivide loads by type of grain, as follows: 10% rapeseed (canola), 3% sunflower, 45% corn and soyameal (primarily U.S. to Manitoba - although there were some intraprovincial corn movements), 9% various specialty crops (timothy, mustard, etc.), 1% oats/wheat/barley, 25% flax and rye, and 7% "other" (screenings, "dry grain", etc.)

Finally, it must be noted that all of the previous observations on operating characteristics have not fully accounted for the differences among different groups of carriers and/or different markets. Typically, the first group of carriers (rural general freight): i) are primarily involved in intraprovincial movements; ii) are generally small (i.e., in terms of commercial grain hauling - see Table 4.3); iii) have generally low utilization rates (loads or distance per unit per year) on grain hauling activities; iv) have mostly empty back-hauls; and v) are engaged in local hauling (farm to country elevator) as and when conditions permit (but are generally unable to provide estimates of annual volumes on this aspect of their business).

The second group of carriers ("other PSV"): i) typically operate extraprovincially (all contacted "other PSV" did so, and six operated only extraprovincially); ii) are larger than the first group (see Table 4.3); iii) have high (or "relatively" high) utilization rates; iv) tend to operate with few empty backhauls (although may have empty "cross-hauls"); and, v) are not generally involved in local hauling (all reporting "other PSV" carriers reported average length of hauls over 160 kilometres, and their average haul for all loads was over 640 kilometres).

Not enough information was obtained on the third group of carriers ("other") to accurately portray their operating characteristics. It is believed, however, that this group is quite diverse: for example, some Farm-plate operations similar

to the first group of carriers, some CT-plate operations with their own unique operating characteristics (often governed by the nature of their other commercial activities), and a wide group of other types.

4.8 Summary

Table 4.4 summarizes the number of commercial grain truckers and their hopper-bottom equipment. The 75 carriers that were contacted operated 453 units in the winter of 1982/83 - 39% to 46% of the total estimated fleet domiciled in the three provinces. A further 75 carriers have been identified (but not contacted) and are known to operate 231 to 262 units. In total, the identified carriers (lines 1 and 2) operate about 61% to 70% of the total estimated fleet.

The information shown on line three of the table is speculative. In particular, it must be appreciated that the number of carriers shown depends to a large extent on how these estimated 185 to 295 one to two-truck operators are classified at a particular point in time: many of them can act as private carriers (in which case they would not qualify here as a "commercial grain trucker"), as an owner-operator (for one of the larger carriers or, in some cases, for a private trucker), or as a small "independent" operator. (At other times, of course, they can "park" their trucks and effectively disengage themselves from the grain hauling business.)

In addition to the carriers shown on this table, there are other carriers (possibly a dozen or so "carriers" and numerous "independents") from outside the region (primarily from the United States) that participate in the extraprovincial grain hauling business. In addition to the equipment shown, there are some other grain hauling trucks: a few "end dumps", some vans (bagged grain), and a wide assortment of straight trucks and, in Saskatchewan, straight trucks plus "pups" (almost all farm) which may be used to haul grain for-hire. There are also some hopper-bottom units used almost exclusively to haul other dry bulk freight which are not included in the figures shown in Table 4.4; under certain circumstances, this equipment might become involved in commercial grain hauling.

As shown in the table, the best estimate of the total commercial grain hauling fleet (hopper-bottom units) is between 975-1 175 units. Since it is unlikely that many train combinations were undetected, the figures suggest that about one-fifth of this fleet consists of trains (i.e., the 155 identified on line one plus possibly 30 to 50 others). Further, A-Trains out-number B-Trains by a ratio in the order of two to one. Within individual provinces, it is apparent that B-Trains are most prevalent in Alberta whereas the opposite holds true in the other provinces.

Table 4.4

HOPPER-BOTTOM FLEET
PRAIRIE-DOMICILED CARRIERS
- WINTER 1982/83 -

		No. of	Hopper-Bottom Units			
		Carriers	Semis	A-Trains	B-Trains	Total
1. Carriers - contacted	A	21	74	11	30	115
	S	23	118	76	15	209
	M	31	106	19	4	129
Sub-total		75	298	106	49	453
2. Carriers - identified	A	34				79
	S	17				78-102
	M	24				74-81
Sub-total		75				231-262
3. Carriers - identified and "other", fleets assumed	A	25-45				76-186
	S	100-150				138-164
	M	60-100				77-110
Sub-total		185-295				291-460
4. Carriers - Total	A	80-100				270-380
	S	140-190				425-475
	M	115-155				280-320
TOTAL		335-445				975-1 175

Saskatchewan carriers dominate commercial grain hauling on the Prairies. They are the largest in terms of numbers; they account for over 40% of the fleet; they are larger firms (average hopper-bottom fleet size); they have the largest "home" market; and they tend to dominate the interprovincial traffic (Saskatchewan-Alberta and Saskatchewan-Manitoba). Furthermore, there appears to be more specialization in commercial grain hauling in Saskatchewan; that is, Saskatchewan carriers tend to be "dry bulk" haulers and not "general freight" carriers with one or two hopper-bottom on the sideline. There are two qualifications to this: (i) there is also some specialization in Alberta (but currently, and possibly owing to the reported "poor" year, average fleet sizes are smaller); and, (ii) there are also some specialized firms in Manitoba -particularly those concentrating on the Manitoba-U.S. lane.

Annual utilization of hopper-bottom units varies considerably from one carrier to another and from one hauling situation (grain type, region, etc.) to another. In addition, there was a considerable number of opinions expressed to the effect that 1982 was a poor year in which to gauge the potential utilization rates of hopper-bottom equipment. (This was not true for all opinions on the subject, but it is indicative of the majority view.)

In an attempt to gain a better understanding of what the utilization rates of hopper-bottom equipment could be, annual utilization for six of the 75 contacted carriers is shown in Figure 4.2. The criteria for selecting these firms (aside from having the necessary data) was that the distance and load information had to be for units primarily engaged in grain hauling on a reasonably steady basis throughout the year. Further, the type of hauling had to be reasonably constant in terms of the average length of haul.

The six observations shown in Figure 4.2 involved steady haul over shipment distances ranging from 50 km to 800 plus km. At the low end of this range, maximum observed utilization was in the order of 80-100 thousand km/unit/year; at the high end, total utilization of 140-200 thousand km/unit/year was observed. As noted in the figure, the higher values have been designated as 'High Performance'; only in exceptional situations, having very organized, steady demand, would this utilization level be 'bettered'. The lower value has been designated as 'Good Performance'; this level of utilization would be generally feasible in reasonably steady demand situations. Of course, many existing opertions function at utilization levels (often well) below the 'Good Performance' curve.

Also shown in Figure 4.2 are 'simulated' utilization potential estimates for haul distances of less than 50 km. An example calculation is included in the figure. As can be seen, utilization levels would 'fall-off' rapidly for operations

steadily involved in a dedicated manner in haul distances less than 50 km. At these distances, load and unload time dominates vehicle activity; three or four loads/unit/day would constitute a reasonable upper level of use (say for 250 days/year), quite independent of shipment distance.

For the actual observations plotted in Figure 4.2, the total annual observed loads/unit/year are also shown (in parentheses). As would be expected, load handlings decrease as haul length increases, but there is no clear or simple relationship. In this regard, the annual loads per unit depend on many factors over and above shipping distance, including backhaul experience, primary vs. secondary moves, and possibly operating region. (There is insufficient information to be more precise on this matter.)

Other observations on the operating characteristics of the hopper-bottom fleet are:

(i) The occurrence of empty backhauls is almost universal at the local end of the business and is rare at the "long-haul" end. (Obviously there are exceptions);

(ii) There are clearly "ups and downs" in the demand for commercial grain hauling services, but no consistent (or universally agreed upon) seasonal pattern has been determined;

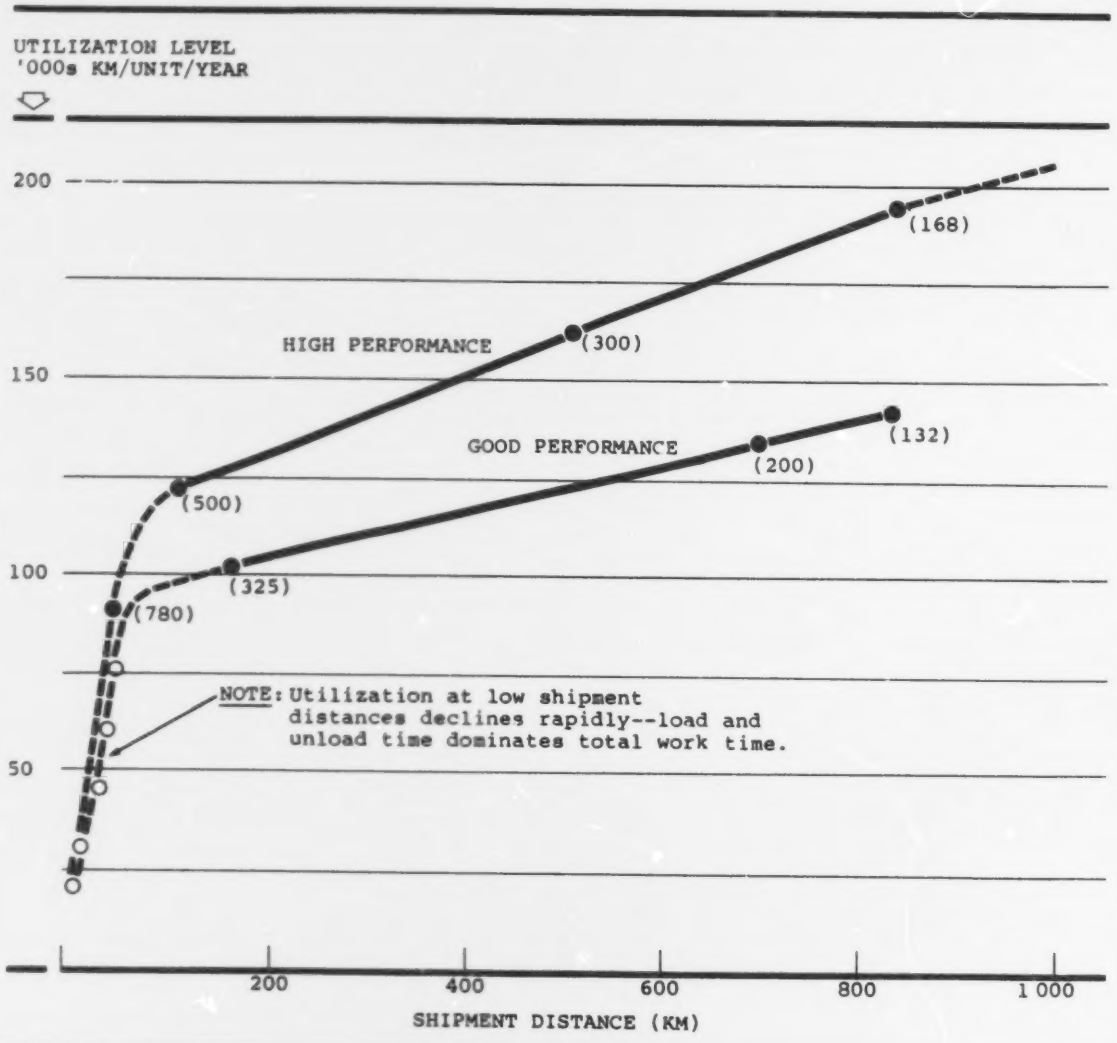
(iii) Commercial grain hauling is closely associated with other dry bulk hauling (fertilizer, potash), and, to some extent (e.g., capacity), is affected by these other transportation markets;

(iv) There is a wide range of grain types (and related grain products) hauled: for the identified fleet, these grains tend to be other than the Board grains moving from the farm to the country elevator; and

(v) There is a great amount of fluidity in the commercial grain hauling industry and, given the regulatory environment and the organization of enterprises within the industry, there appears to be a considerable capacity to adapt to rapidly changing market conditions.

FIGURE 4.2

ANNUAL VEHICLE UTILIZATION POTENTIAL ('000s km/unit/year) VS. SHIPMENT DISTANCE (KM)



NOTES:

●Actual observations for prairie grain truckers (1982) having steady activity.

OSimulated performance EXAMPLE: @ 20 km shipment distance, assumed maximum average handling of 3 loads/unit/day, for 250 days/yr.
∴ UTILIZATION = 20 x 2 x 3 x 250 = 30 000 km/unit/year.

(xxx) Actual observations of loads handled/unit/year.

REFERENCES

1 It is not clear how useful this information is. First, these authorities are not representative of carriers (i.e., one carrier may have several authorities); second, some broader authorities may permit grain hauling; third, it is not known how many of the "Fertilizer" authorites should be added to these grain authorities (e.g., on the basis of single-trip authorities); fourth, the existence of an authority does not mean that a carrier is actually exercising it; and, fifth, if the authority is not 'complemented' in the adjacent jurisdiction(s), it is meaningless regardless.

2 Other organizations contacted include: Alberta Food Products Ltd. (Fort Saskatchewan); United Oilseed Products (Lloydminster); Ellison Milling Company (Lethbridge); Alberta Terminals Ltd. (Calgary); Alberta Grain Commission; Alberta Department of Economic Development; and, Byers Flour Mills (Camrose).

3 It was suggested that the majority of the 23 trains shown for this group are B-Trains.

4 To calculate average loads/trailer/year, some of the "end dump" equipment had to be included in the calculations as there was no way of isolating the loads handled by one type of trailer.

5 There were some difficulties in compiling this list. Specifically, three or four "carriers" were found to be operating under the authorities (extraprovincial) of larger carriers for most of the year. In effect, these were "large" onwer-operators, (i.e., they owned several pieces of equipment). These "owner-operator/carriers" have not been included as separte entities in the figures reported.

6 Industry sources have also suggested that many of the owner-operators are gravel-truck operators.

7 These estimates exclude the hopper-bottoms used exclusively for potash.

8 These vans were being used to haul bagged grain to the southern U.S. with produce hauled back.

9 One of the attempts to determine how many farm trucks could be used for "commercial grain trucking" (as defined in this study) involved an examination of records from the Manitoba Public Insurance Corporation. Although this examination did not produce anything that could be used in the report, there were some interesting findings. Specifically, in 1980 there were 160 farm trucks with a registered gross weight of over 34 tonnes. By 1982, this figure had grown to 252 trucks. It is reasonable to believe that a good number of these heavy Farm trucks are used for hauling grain. (What is difficult to determine is how many are used on a for-hire basis.)

10 Saskatchewan officials have confirmed that some Manitoba-domiciled vehicles operating with T-plates are being used to haul grain across the border.

11 The broker actually suggested 150 units (most of which he could identify with specific carriers), but allowed that there might be another 25 or so which he was not aware of.

12 The omission of data on local loads only affects the utilization figures of some of the first group of carriers (rural general freight) as, typically, the second group of carriers - whose utilization figures dominate the data - are not involved in this aspect of commercial grain hauling.

Chapter 5

RATE AND COST CONSIDERATIONS: FALL 1982

5.1 Purpose

This chapter presents and comments on rate schedules relevant to commercial grain trucking as of Fall 1982.

5.2 Sources of Rate Information

As discussed in Chapter 2, commercial grain trucking rates are unregulated throughout the Prairie region, for both intra and extraprovincial movements. Thus, there is no regulatory source of data respecting grain trucking rates, nor were any other relevant government data sources identified on the subject.

The rate information presented and analyzed here accordingly had to be obtained from industry sources. To this effect, all of the industry contacts made for purposes of developing the fleet and operational information presented in Chapter 4 were requested to provide rate schedules applicable for commercial grain haul as of Fall 1982. Most complied, thus providing a good basis for cross-checking among carriers, and between shippers and carriers.

5.3 Alberta Rates

Table 5.1 and Figure 5.1 summarize the 'formal' commercial grain trucking rate schedules and individual rates obtained from Alberta industry sources, in effect Fall 1982.

Two carrier tariffs are shown in Table 5.1, one published by the Alberta Trucking Association (ATA), the other by the Western Tariff Bureau (WTB no. 75). Both tariffs envisage intraprovincial movements only. Neither has any particular status; carriers participating in their publication are free to assess whatever other rates they see fit.

Two 'shipper tariffs' (i.e., rates which shippers say they will pay) are also presented, applicable to hauls conducted on behalf of the Alberta Wheat Pool and NARP (rapeseed processors at Sexsmith). The NARP tariff envisages both extra (B.C. to Alberta) and intraprovincial movements.

The following structural features are evident in these 'formal' tariffs:

Table 5.1

GRAIN HAULING (BULK) RATES
(cents/tonne)

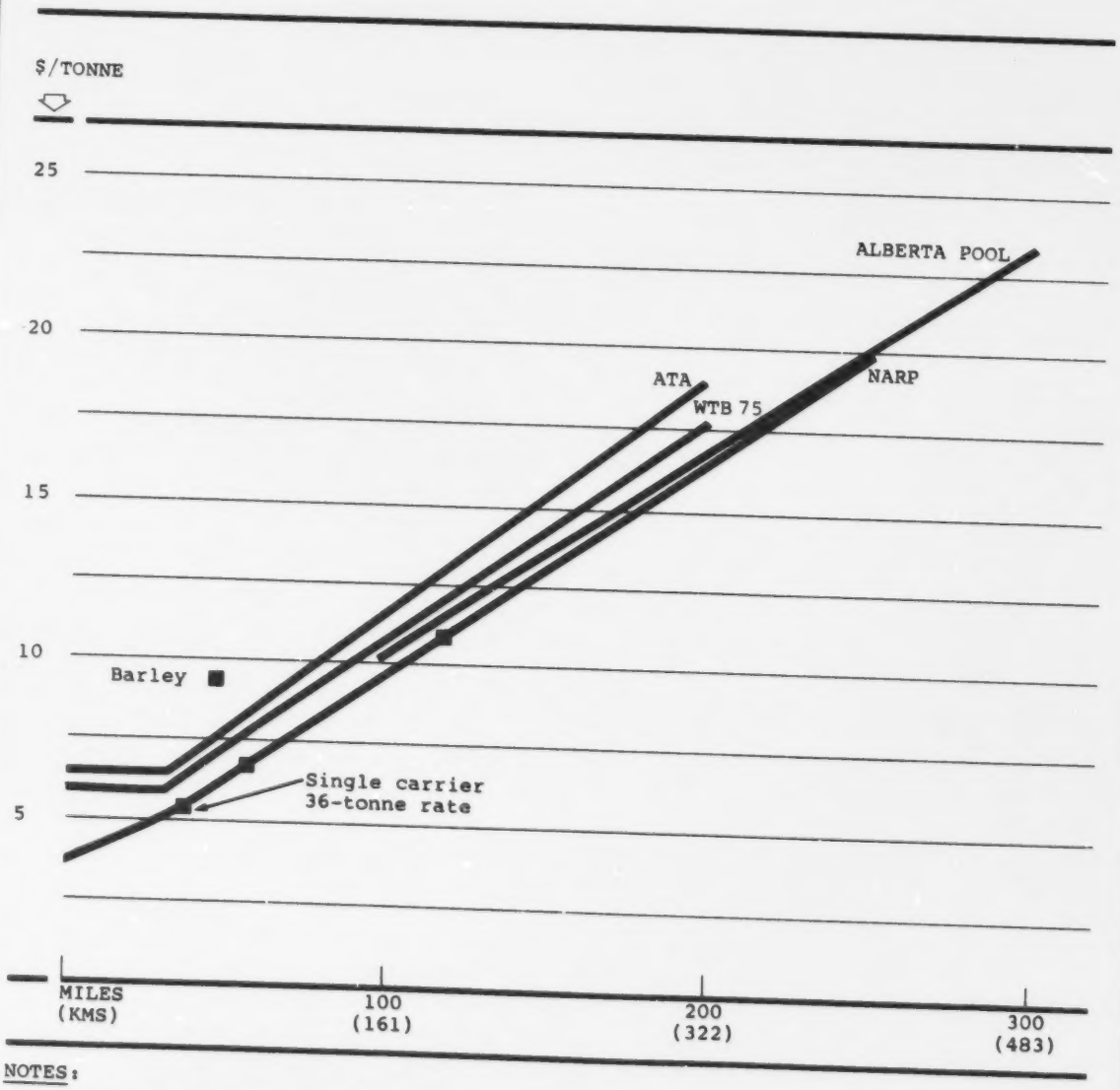
ALBERTA CARRIERS
FALL 1982
PRIMARILY INTRAPROV.

km	SOURCE / SIZE MILES	ATA I	WTB75 I	ALBERTA POOL I	37	OTHER OBSERVATIONS I	I	I	NARP
	3	617	572						375
	8	"	"						"
	13	"	"						420
29	18	"	"						"
	23	"	"						460
	28	"	"						"
	33	662	630		506				510
61	38	"	"		"				"
	43	761	702			916-942			595
	48	"	"			"			"
	53	838	780				670		670
93	58	"	"				"		"
	63	882	832						745
	68	"	"						"
	73	1 014	937						815
126	78	"	"						"
	83	1 058	589						890
	88	"	"						"
	93	1 147	1 067	1 024					960
158	98	"	"	"					"
	103	1 191	1 119						1 035
	108	"	"						"
	113	1 268	1 197					1 100	1 100
190	118	"	"					"	"
	123	1 367	1 274						1 170
	128	"	"						"
	133	1 455	1 352						1 240
222	138	"	"						"
	143	1 499	1 404	1 364					1 310
	148	"	"	"					"
	153	1 588	1 483						1 380
254	158	"	"						"
	163	1 654	1 535						1 445
	168	"	"						"
	173	1 742	1 639						1 515
286	178	"	"						"
	183	1 830	1 691						1 580
	188	"	"						"
	193	1 896	1 769						1 650
319	198	"	"						"
	203								1 720
	208								"
	213								1 790
351	218								"
	223								1 860
	228								"
	233								1 925
383	238								"
	243								2 000
	248								"
	253								
415	258								
	263								
	268								
	273								
447	278								
	283								
	288								2 750
	293			2 362					
480	298			"					

SIZE: I means rate independent of shipment size, assuming standard semi-load minimum
37 means 37 tonnes

FIGURE 5.1

GRAIN HAULING (BULK) RATES
ALBERTA
FALL 1982
($/tonne vs. shipment dist.)



NOTES:

1. Rates apply to semi-load (approximately 23 tonnes) and greater (except as noted). There is no shipment size differential.
2. The ATA, WTB 75 and Alberta Pool schedules apply for intra-provincial movements. NARP rates are applicable intra-Alberta and extra-Alberta-B.C.

(i) all exhibit a (more or less) fixed price for short hauls (less than about 30 miles), plus a (more or less) fixed charge per tonne-mile for shipment distances greater than the minimum;

(ii) all effectively extend to a maximum shipment distance of 200-300 miles;

(iii) all are effectively commodity non-specific albeit they envisage a minimum shipment size of about 23 tonnes (i.e., a standard semi-trailer load);

(iv) none provide for a shipment size rate differential; and

(v) The WTB no. 75 tariff is 6-8% lower than the ATA tariff, and typically $1.00-$1.20/tonne (7-27%) higher than the NARP tariff; the Alberta Pool tariff lies between the WTC and NARP schedules.

Three isolated rate observations lay on the NARP schedule; one isolated observation (involving a short distance movement of barley) was substantially higher than any of the tariffs.

As to the actual rates assessed in different circumstances (as compared with the 'formal' schedules), the following observations were provided by the industry contacts in Alberta:

(i) 18 of the contacted carriers provided information on the rates they assessed: 5 of the 18 stated that they adhered 'strictly' to WTC no. 75; 5 admitted to some form of discounting from the WTB tariff (up to 10% typically, depending on the opportunities for backhauls); 5 hauled mainly for major shippers who established their own rate (e.g., NARP, Alberta Pool); the remaining 3 indicated that they assessed their own 'special' rates (which, as it turns out, are equivalent to the NARP rates);

(ii) one major shipper indicated that discounting, and in particular discounting from the WTB tariff, is fairly common; such discounting accounted for a range of cost considertions (empty backhauls, roads, loading conditions) and market conditions (competition, volume, seasonality) to which the rate schedules are not sensitive; and

(iii) some contacts expressed the view that some of the smaller carriers - at times operating in contravention of Alberta regulations (i.e., farm

trucks) - were generally charging 10-20% below WTB no. 75 (and on occasion as much as 40% below WTB no. 75).

For comparative purposes, Figure 5.2 illustrates the Alberta Wheat Pool bulk fertilizer rates applicable in Fall 1982. The fertilizer rate is higher than the grain rate for haul lengths up to about 200 miles, decreasing progressively from about $3/tonne (or $70/load) higher at short, local haul distances to no meaningful difference at 200 miles. The rationale for the fertilizer-grain rate differential is not obvious; one major shipper indicated that the differential is probably more the consequence of historical 'accidents' associated with initial development of the two tariffs than it is with either cost or market logic.1

5.4 Saskatchewan Rates

Unlike Alberta, there are no carrier-group tariffs published in Saskatchewan applicable for grain movements. Table 5.2 and Figure 5.3 summarize the tariff schedules published by three of Saskatchewan's (and western Canada's) largest commercial grain truckers. Because of the prominence of these carriers in the market, it is reasonable to assume that these tariffs represent a 'norm' for the Saskatchewan-domiciled carriers. The influence of these tariffs is broader than might initially be thought, in that two of these carriers are major participants in extraprovincial movements within the region (and most particularly between Alberta and Saskatchewan) as well as dominant participants within Saskatchewan.

The following structural features are evident in these three carrier-specific tariffs.

(i) all exhibit a fixed price for short-hauls (less than 30 miles), plus a (more or less) fixed charge per tonne-mile for shipment distances greater than the minimum;

(ii) all effectively extend to a maximum shipment distance of 250-300 miles;

(iii) all are commodity non-specific (one applies to all bulk commodities handled in hopper-bottom trailers);

(iv) all envisage a minimum shipment size of about 23 tonnes (i.e., a standard semi-trailer load), and (unlike Alberta), provide for (varying) reductions for train-lot shipment sizes;

(v) on semi-trailer load lots, two of the tariffs are within 5-10% of each other for hauls up to 150

Table 5.2

GRAIN HAULING (BULK) RATES
(cents/tonne)

SASKATCHEWAN CARRIERS
FALL 1982

km	MILES	51 23	51 37	52 23	52 37	53 23	53 37
	3	367	367	464	464	463	
	8	"	"	"	"	"	
	13	"	"	"	"	"	
29	18	"	"	"	"	"	
	23	"	"	"	"	"	
	28	"	"	519	519	"	
	33	480		"	"	489	
61	38	505		577	577	533	
	43	515		601	601	573	
	48	540		653	653	614	
	53	595		"	"	656	
93	58	620		702	702	697	
	63	675		758		739	
	68	700		814		780	
	73	750		867		817	
126	78	820		920		853	
	83	875		"		889	
	88	900		974		925	
	93	945		1 029		958	
158	98	975		1 090		990	
	103	1 040		1 142		1 087	
	108	1 065		"		"	
	113	1 090		1 195		1 189	
190	118	1 120		1 248		"	
	123	1 145		1 300		1 288	
	128	1 170		1 352		"	
	133	1 195		"		1 387	
222	138	1 225		1 412		"	
	143	1 275		1 473		1 486	
	148	1 300		1 533		"	
	153	1 400		1 593		1 585	
254	158	1 450		"		"	
	163	1 475		1 654		1 684	
	168	1 530		1 715		"	
	173	1 555		1 785		1 783	
286	178	1 580		1 846		"	
	183	1 630		"		1 882	
	188	1 660		1 907		"	
	193	1 710		1 967		1 980	
319	198	1 735		2 028		"	
	203	1 760		2 088		2 080	
	208	1 785		2 159		"	
	213	1 810		"		2 179	
351	218	1 860		2 220		"	
	223	1 890		2 280		2 278	
	228	1 915		2 351		"	
	233	1 965		"		2 377	
383	238	1 990		2 411		"	
	243	2 020		2 472		2 476	
	248	2 070		2 522		"	
	253	2 220				2 575	
415	258	2 245				"	
	263	2 295				2 674	
	268	2 310				"	
	273	2 325				2 773	
447	278	2 350				"	
	283	2 400				2 872	
	288	2 425				"	
	293	2 450				2 971	
480	298	2 480				"	

23 tonne rate minus $0.50/tonne

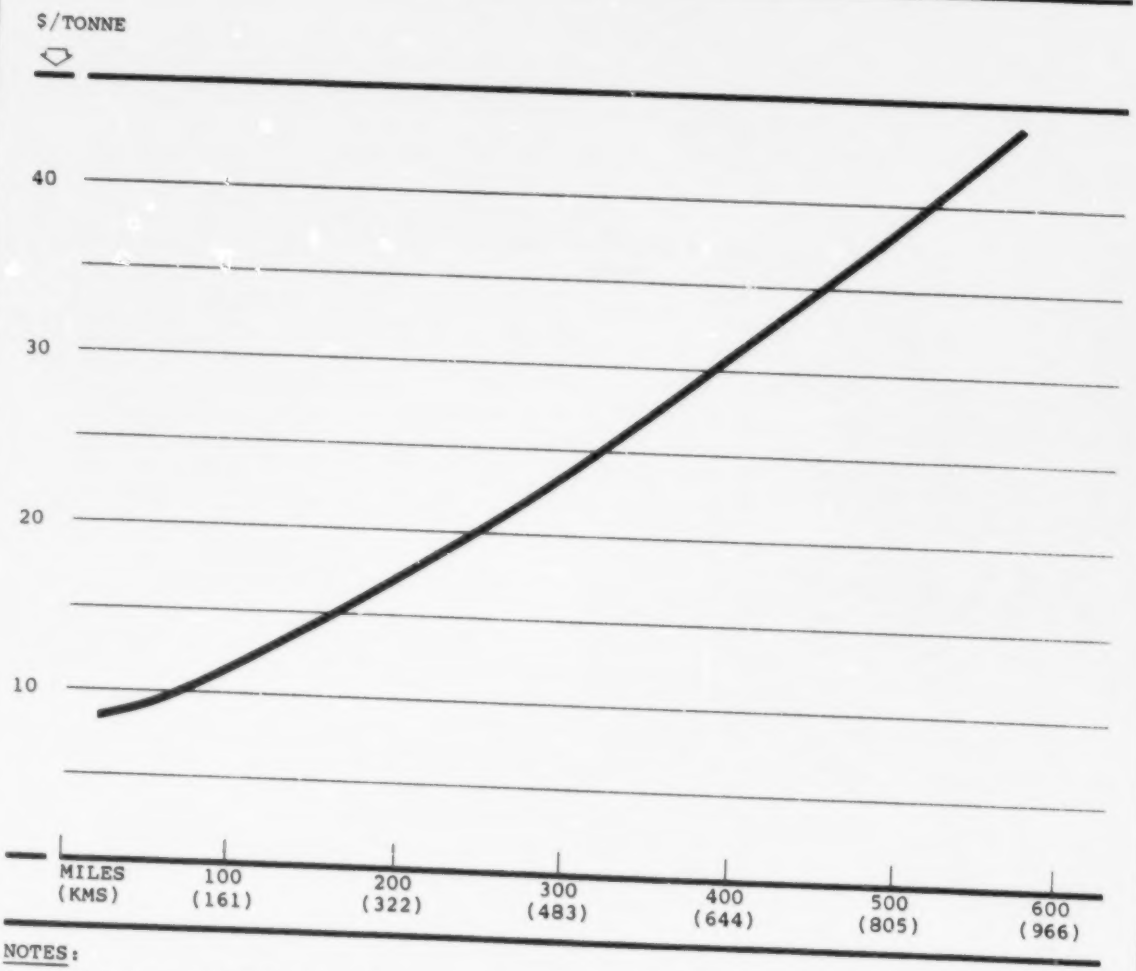
10% discount from 23 tonne rate

15% discount from 23 tonne rate

SIZE: 23 means 23 tonnes (semi-load)
37 means 37 tonnes (train-load)

FIGURE 5.2

BULK FERTILIZER RATES ALBERTA WHEAT POOL
Applicable Fall 1982* ($/tonne vs. shipment dist.)
BASED ON A POINT-TO-POINT TARIFF
FROM CALGARY TO VARIOUS POINTS
IN ALBERTA AND B.C.



NOTES:

1. Rates apply to semi-load (approximately 23 tonnes) and greater. There is no shipment size differential.
2. For a movement involving more than one delivery, a charge of $27.50 per (extra) drop-off is paid.
3. The rate assumes up to 2 hours unloading time. Additional unloading time is paid at $27.50/hr.

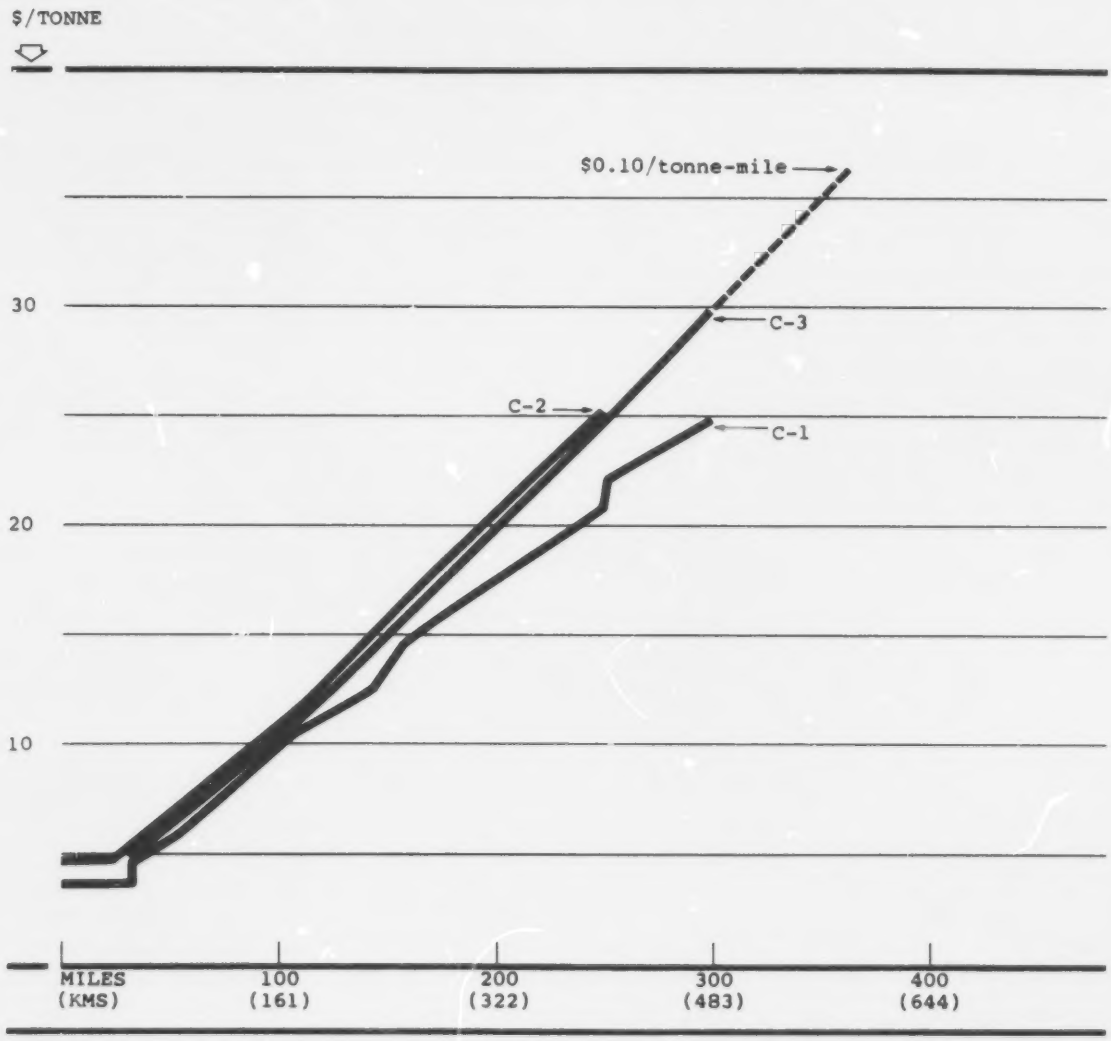
* Became effective August 15, 1981.

FIGURE 5.3

GRAIN HAULING (BULK) RATES
SASKATCHEWAN
FALL, 1982

($/tonne vs. shipment dist.)

SEMI-TRAILER LOTS (APPROXIMATELY 23 tonnes)(1)



NOTES:

1. The following reductions are provided for A/B train lots (approximately 33 + tonne shipments)

   C-1: $0.50/tonne C-2: 10% (over 60 miles) C-3: 15%

miles, and effectively the same thereafter; the third (applicable for a carrier specializing in relatively short-haul, intraprovincial movements) is generally 10-20% below the rates of the other two carriers; and

(vi) for train-lot loads, on the other hand, all three carriers offer rates which are (roughly) within 5-10% of each other.

Two different methods are employed in providing train-lot rate reductions: the low tariff carrier for semi-trailer loads offers a flat $0.50/tonne discount (thus providing a varying percentage reduction from about 9% at the low end of the mileage scale to about 2% at the high end); the other two carriers offer straight percentage reductions of 10% (over 60 miles) and 15% respectively off the standard semi-lot rate. Caution should be exercised in making too much of both the absolute amounts and methods used in pricing these train lots. To this effect, this provision in the tariffs is 'new' as of 1982, and as such, has not yet had time to be normalized.

In addition to these three carrier tariffs, five of the other contacted carriers indicated use of their own tariffs which were based on mileage rates, subject to minimums. The specific rates were:

Carrier	Shipment Size (tonnes)	Loaded-Mile Charge ($)	Minimum Charge/Load ($)	Equivalents ¢ per tonne-mile	Equivalents min. $/tonne
S- 7	23	$2.00	$100	8.7¢	$4.34
S-15	23	$2.00	$75	8.7¢	$3.26
	37	$2.75	?	7.4¢	
S-16	23	$2.70	$135	11.7¢	$5.87
S-17	23	$2.25	$100-$125	9.8¢	$4.34-$5.43
S-22	23	$2.25	?	9.8¢	?

The carriers quoting these rates concentrate on local and mid-length hauls. Converting the $2.00/loaded-mile rate to a $/tonne rate, and comparing it to the lowest carrier tariff illustrated in Figure 5.3: the mileage-based rate undercuts the $/tonne tariff by about a $1/tonne for shipment distances of less than (about) 125 miles; is roughly the same as the $/tonne rate between 125 and 200 miles; and is somewhat higher for distances greater than 200 miles. The $2.25/loaded-mile charge undercuts all of the $/tonne tariffs for distances of less than 100 miles.

One other Saskatchewan carrier, involved nearly totally in long-distance balanced hauls to/from the U.S. (potash south, corn and soyabean meal north) also assesses per mile charges. During Winter 1982, for a standard semi-load, these charges were typically $1.35/mile south and $0.80-$1.00/mile north, for an average of (about) $1.10-$1.15/running-mile.

Indications from the carrier interviews suggested that substantial discounting from the posted tariffs is presently taking place, sometimes down to a level producing revenue equivalent to as low as $0.80/running-mile. Part of this is undoubtedly due to the relatively simplistic nature of the posted tariffs, and in particular their insensitivity to variations in loading-unloading conditions, seasonality, backhaul experience, volume commitments, etc. More importantly, though, substantial excess capacity in the fleet is taking its toll on actual prices.

For comparative purposes, Figure 5.4 illustrates the Saskatchewan Wheat Pool bulk fertilizer trucking rates applicable Fall 1982. These rates apply for fertilizer movements from Calgary and Medicine Hat to points in Saskatchewan. The following observations are of interest:

(i) Unlike the grain tariffs for the large Saskatchewan carriers, there is no shipment size differential in the fertilizer rates.

    This is probably due to a combination of a number of factors: gcw weight limits on non-Class 1 and Class 2 highways; farmer reluctance to purchase 37 tonne lots of fertilizer; difficulties in handling trains at the farm level; inadequate time for the marketplace to adjust (i.e., only in the past year have shipment size differentials been introduced for grain in Saskatchewan); and

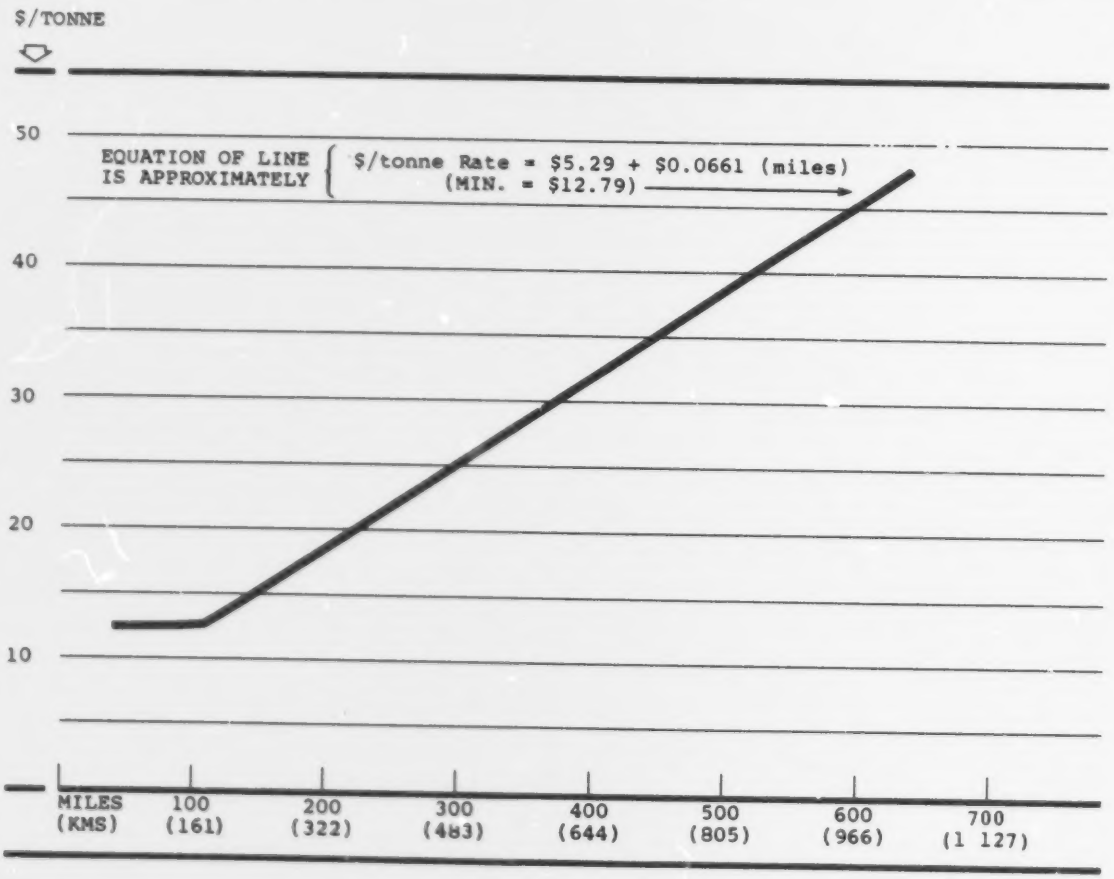
(ii) The fertilizer tariff is substantially higher than the grain tariff at shipment distances of less than 125 miles, and more or less the same as the lowest major carrier tariff for longer shipments.

    The 'high' rate at the low mileage end is not meaningful in practice, however. To this effect, most fertilizer shipments into Saskatchewan out of Alberta are at mileage distances of 150 miles and greater.

This Saskatchewan Wheat Pool fertilizer tariff is negotiated each year between the Pool and its group of carriers. It is understood that the negotiation revolves around establishing values of the determinant variables in the following 'rate formula' (subject to a minimum, as shown in Figure 5.4):

FIGURE 5.4

BULK FERTILIZER RATES SASKATCHEWAN WHEAT POOL
Applicable Fall 1982* ($/tonne vs. shipment dist.)
BASED ON A POINT-TO-POINT TARIFF
FROM CALGARY AND MEDICINE HAT
TO POINTS IN SASKATCHEWAN



NOTES:

1. Rates apply to semi-load (approximately 23 tonnes) and greater. No differential for large shipments.

2. These rates are approximately 14.8% higher than rates in effect for period July 1, 1980 to June 30, 1981.

* Became effective July 1, 1981

$$RATE = \frac{(SD \times BHF)\ (RC) + (L/UL)}{SW}$$

where:

RATE is expressed in $/unit weight

SD = shipment distance

BHF = backhaul factor, being the ratio of total distance run in handling the shipment to the shipment distance itself

RC = truck running-cost/unit distance

L/UL = a fixed load-unload cost

SW = shipment weight.

For 1982, it is understood that the values of the various variables were (roughly):

BHF = 1.5 (implying that the backhauls were empty about 50% of the time).

RC = $0.95/mile

L/UL = $100

SW = 20 tonnes

(Note that the actual values of these determinant variables must have been somewhat different than those shown above; the given values are over-estimating by 3 or 4% the actual rates presented in Figure 5.4.)

(It is of interest to note that the fertilizer manufacturers - other than[2] the Federated Coop/Pool plants in Calgary and Medicine Hat - reportedly use 50 ton point-to-point rail rates for fertilizer movements into Saskatchewan, even when trucks are used. This can lead to some highly distorted trucking rates as a function of distance. (While this has not been checked) one carrier gave the following example: for fertilizer movements from the Esso plant at Beamer, Alberta: the rate to Meadow Lake, Saskatchewan is $38.80/tonne while the rate to Melfort - which is twice the distance by road - is $34.00/tonne.)

5.5 Manitoba Rates

Rates used in Manitoba for commercial grain hauling are very confusing. There is little uniformity in the basis for assessing charges and the level of rates tends to vary widely. Unlike the situation in Alberta and, to a lesser extent in

Saskatchewan, there is no province-wide standard or 'norm' influencing the structure and/or the general level of rates. Various industry contacts have indicated three basic reasons for this diversity in the Manitoba rates:

(i) the fact that there has been no commercial grain trucking experiment undertaken in Manitoba by the Wheat Board (as was done in Saskatchewan and Alberta during the seventies). These experiments in the other provinces led to the formulation of basic group tariffs which, although long-forgotten, provided a common reference point for tariff development;

(ii) the wide diversity in carrier types involved in the business, and in particular, the relatively significant involvement of rural general freight carriers; and

(iii) the significance and competitiveness of Manitoba-U.S. movements to Manitoba carriers, with Manitoba carriers often competing with American independents.

In addition, no shipper-based bulk commodity truck tariffs equivalent to the Saskatchewan and Alberta fertilizer tariffs, or the NARP tariffs in Alberta, have apparently been devised in Manitoba. Such tariffs appear to, at least in a structural sense, permeate other tariffs.

Figure 5.5 summarizes the rate information obtained from 25 Manitoba carrier contacts, and one shipper contact. Summary details are shown in Tables 5.3, 5.4 and 5.5.

It is convenient to discuss these rates in terms of those applicable to: i) local moves; ii) mid-distance (generally intraprovincial) moves, and iii) long-distance (generally extraprovincial) moves. The following observations are pertinent:

Respecting 'Local' Rates

Sixteen of the contacted Manitoba carriers indicated a 'local' rate component in their tariffs. Such rates are applicable in short-distance hauls, in no case greater than 60 miles in length. The local rate basis varied widely:

7	carriers	assess	per	hour	charges ($30-$45)
2	"	"	"	cwt	" (38¢-40¢)
3	"	"	"	load	" ($85-$120)
3	"	"	"	bushel	" (7¢-10¢)
1	"	"	"	mile	" ($1.85, min. $85)

Table 5.3

GRAIN HAULING (BULK) RATES
MANITOBA CARRIERS
APPLICABLE ON INTRAPROVINCIAL MOVES
FALL 1982

Carrier	Carrier Type	Basis of Tariff	Typical Rate	Hauling Conditions			
				Back-Haul	Miles	Primary or Sec.?	Comm.
M1	GF	load	$275/load	No	120	P	canola
M2	GF	cwt	$0.50/cwt	No	80	P	timothy
			$0.55/cwt	No	125	P	canary
			$0.60/cwt	No	150	P	canola
M3	PSV	load	$185/load	Mostly	87		canola
		load	$125/load	No	60		various
M4	GF	mile	$2.50/mile	No	avg. 100	P	various
M5	GF	mile	$2.10/mile	No		P	various
M6	PSV	mile	$1.80/mile	No			various
M7	GF	cwt	$0.82/cwt	No	130		timothy clover
			$0.75/cwt	No	100		canola
M8	GF	GF tariff	$0.82/cwt	No	avg. 100	P	various
M9	GF	tonne	$7.00/tonne	Yes	176	S	various sunflower mustard
M10	GF	mile	$2.00-$2.25/mile	No	150-200	P	canola
M11	GF	running-mile	$1.00/running mile			P	mustard various
M12	GF	mile	$2.30/mile	No		P	sunflower canola
M13	GF	mile	$2.00/mile	No		P	various
M14	Farm	mile	$1.85/mile	No		P	various
M15	GF	mile	$2.00/mile	Mostly No		P	various

As shown in Figure 5.5, such charges, when converted to $/tonne charges (assuming 23 tonne loads) lead to local rates ranging from about $3.50-$8.50/tonne.

Respecting Mid-Distance (Generally Intraprovincial) Hauls

Table 5.3 shows the diversity of rate types used on mid-distance hauls, generally, but not always, intraprovincial. In terms of understanding the information shown: (a) type of carrier is indicated by "GF" (meaning a PSV carrier serving as a general freight carrier between some rural area and Winnipeg (and other supply centres)), "PSV" (meaning a carrier who may or may not have some general freight aspects to its authority but typically is not serving the rural LTL general freight market), and "Farm" (indicating a farm-plate operation); (b) the "basis of tariff" column is that indicated by the carrier during an interview; it is not necessarily the method used to charge rates (e.g., a carrier indicating a "per mile" basis may sometimes convert this to a weight basis for the purpose of invoicing customers); (c) the columns shown under "Hauling Conditions" contain information on typical operating conditions; in practice, of course, conditions will vary somewhat (e.g., a carrier that "typically" has empty backhauls will sometimes be able to match a load of fertilizer with a load of grain).

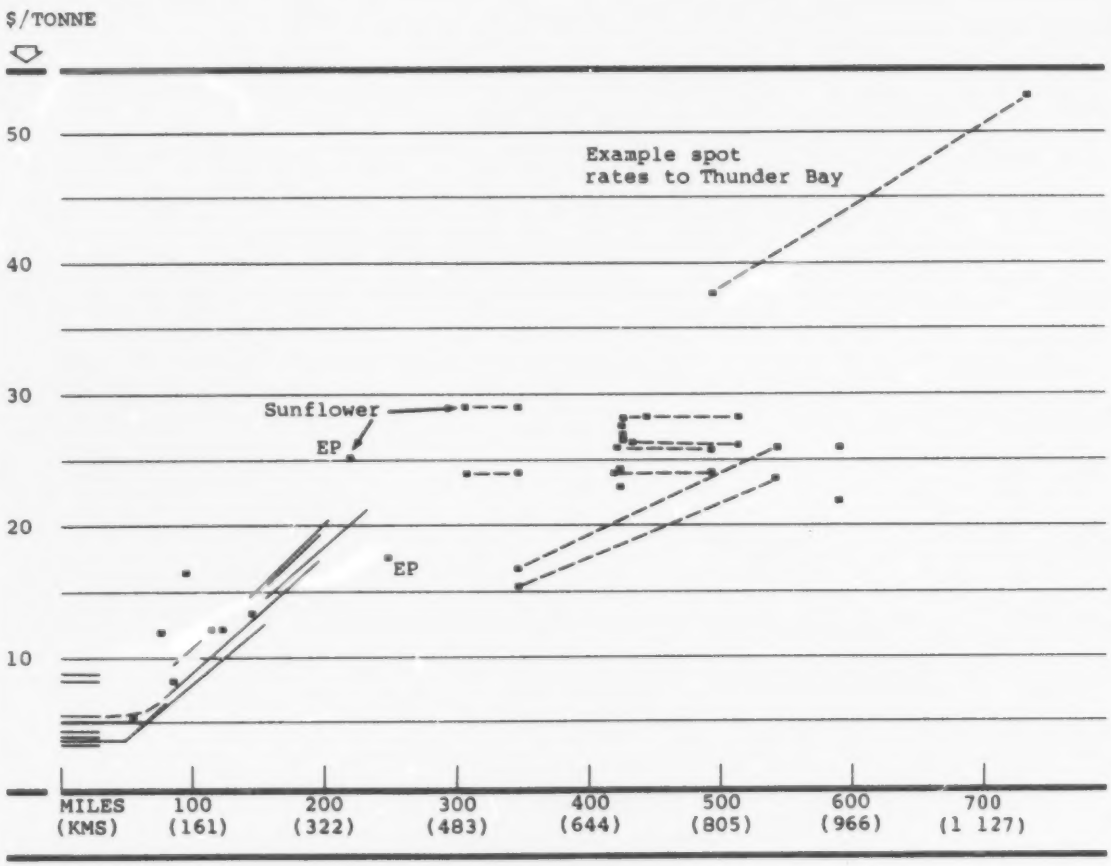
To assess the rate information shown in Table 5.3, the various charges have been converted to "cents/tonne" in Table 5.4, assuming a typical load of 22.7 tonnes. (This, of course, is not typical for some grains such as sunflowers, and it ignores the effect of larger loads on A or B-Train combinations). In the computation of this table, the per weight and the per bushel charges were allocated to the first column; the per mile charges were given an individual column for each carrier that indicated such charges; the rates are shown within the distances considered typical by each carrier; and, where possible, local charges have been included in the 0-30 mile band (and, in some cases higher). It was not possible to include on this table those local charges assessed on the basis of time.

While generalizations on the basis of the information shown in Tables 5.3 and 5.4 are difficult, the following points can be noted: (a) many carriers suggested that the rate information given was a "target"; (b) most carriers indicated that variations from "target" rates were the norm; and, (c) the effect of those carriers using a per mile charge is to give the "rate curve" a slightly steeper slope than in

FIGURE 5.5

GRAIN HAULING (BULK) RATES
MANITOBA
FALL, 1982

($/tonne vs. shipment distance)



NOTES:

1. Rates apply to semi-load (approximately 23 tonnes) and greater. There is no shipment size differential.
2. The rates shown for less than 300 miles apply primarily to intra-provincial movements (except for points designated EP), and envisage a typically M/T backhaul situation.
3. The rates shown for greater than 300 miles apply principally to extra-provincial movements (particularly to/from the U.S.), and envisage a reasonably balanced load situation. The exception to this are the Thunder Bay rates which envisage generally M/T backhauls.

■ Spot Rates

Table 5.4

GRAIN HAULING (BULK) RATES
(cents/tonne)

MANITOBA CARRIERS
FALL 1982
PRIMARILY INTRAPROV.

km	MILES	SOURCE / SIZE	VARIOUS WT. CHARGES	INDIVIDUAL CARRIERS QUOTING PER (LOADED) MILE CHARGE OF: $2.50	$2.10	$1.80	$2.00 – $2.25	$1.00 (running)	$2.30	$2.00	$1.85	$2.00
			I	I	I	I	I	I	I	I	I	I
	3											
	8		837, 881,			529	374		257-330	591	374	
	13		396, 367, 414			"	"			"	"	
29	18					"	"			"	"	
	23					"	"			"	"	
	28					"				"	"	
	33					"						
61	38					"					"	
	43					"					"	
	48					"					"	
	53		551			"						
93	58		"			"						
	63					"						
	68					"						
	73					"					530	573
126	78		1 011			595					"	"
	83		"			"				661		
	88		815	936						"		
	93		"	"							643	
158	98	1 806	1 652	1 046		753					"	
	103	"	"	"		"						6
	108			1 156								"
	113			"				925				
	118		1 211					"		925		
190	123		"			912				"		
	128	1 806	1 211			"						
	133	"	"									1 101
222	138					1 070						"
	143		1 322			"				1 189		
	148		"						1 469	"		
	153								"			
254	158				1 434	1 229	1 366	1 536	1 366			
	163				"	"	"	"	"			
	168											
	173	700							1 672	1 454		
286	178	"			1 619		1 542	1 735	"	"		
	183				"		"	"				
	188								1 874			
	193								"			
319	198				1 804		1 718	1 933				
	203				"		"	"				
	208							1 806	2 077			
	213							"	"			
351	218				1 985							
	223				"							
	228											
	233											
383	238				2 174							
	243				"							
	248											
	253											
415	258											
	263											
	268											
	273											
447	278											
	283											
	288											
	293											
480	298											

SIZE: I means rate independent of shipment size, assuming standard semi-load minimum.

Alberta and Saskatchewan (i.e., rates per tonne are often lower in Manitoba than the other two provinces at the low end of the mileage scale, but rise somewhat more rapidly as distance increases; this observation, however, has to be tempered by the previous observation on discounting).

It is surmised that all those factors which are ordinarily covered in more complex transportation tariffs (e.g., the opportunity for backhaul, dead-heading, loading/unloading conditions, volumes of business from individual shippers, seasonality, size of load, etc.) are effectively contained in the difference between actual rates charged and "target" rates.

Respecting Long-Distance (Generally Extraprovincial) Hauls

Table 5.5 summarizes long-distance (generally extraprovincial) grain trucking rates for Manitoba carriers.

While there is a fair amount of diversity, these rates per unit of weight-distance to and from the United States are significantly below intraprovincial rates. The primary reason for this is the existence of two-way hauls.

The few observations on rates to Thunder Bay indicate rate levels more in line with intraprovincial rates. That is, the intraprovincial rate "curves", if extended in a straight line, would just about intersect Thunder Bay rates. This is explained by the lack of backhaul opportunities. (Note: very few of the carriers interviewed actually moved anything to Thunder Bay in 1982).

Impressions gleaned from carrier interviews suggest that Manitoba-United States-Manitoba, and Manitoba-west-Manitoba grain rates are very competitive, largely dictated by shippers, and generally lower than rates of a year ago. One carrier has indicated that as of late, the railways have also become much more competitive on north-bound movements from the U.S.

One final comment on grain hauling rates assessed by or paid to Manitoba carriers is based on an interview with a transportation broker in Winnipeg. In his opinion, the "norm" at the current time (i.e., Winter 1982/83) is $1.15 per loaded mile on extraprovincial hauls over 500 miles (where good balanced loading is experienced) and around $2.00 per loaded mile on the (generally) intraprovincial hauls of roughly 40 to 200 miles (where backhaul opportunities are much less common). It should

Table 5.5

GRAIN HAULING (BULK) RATES
MANITOBA CARRIERS
APPLICABLE ON EXTRAPROVINCIAL MOVES
FALL 1982

Carrier/ Shipper	Carrier Type	Basis of Tariff	Typical Rate	Hauling Conditions				
				Back-Haul	Miles	Primary or Sec.?	Comm.	Special
EM1	PSV	cwt	$1.30/cwt	Yes	450	S	corn	U.S.→M
EM2	PSV	ton	$24.00/ton	Yes	430	S	corn	U.S.→M
		cwt	$1.20-$1.30/cwt	Yes	430-520	S	soymeal various	M→U.S.
EM3	PSV	cwt	$1.10-$1.20/cwt	Yes	425-500	S	flax, rye soymeal	U.S.↔M
EM4	PSV	cwt	$1.10-$1.25/cwt	Yes	≈ 430	S	flax, etc.	M→U.S.
		ton	$21.00-$24.00/ton	Yes	≈ 430	S	soymeal, etc.	U.S.→M
EM5	PSV	?		Yes	avg. 575	S&P	flax, rye soymeal	U.S.↔M
EM6	PSV	cwt	$0.80/cwt	Yes	250	S	various	M↔U.S.
		cwt	$1.20/cwt	Yes	≈ 600	S	"	M↔U.S.
		ton	$20.00/ton	Yes	≈ 600	S	"	U.S.↔M
		bushel	$0.80/bush	Yes	850	S	corn	M↔A
EM7	PSV	?		Yes	avg. 500	S&P	various	M↔West
								M↔U.S.
EM8	GF	cwt	$1.10/cwt	Yes	310-350		sunflower	M↔U.S.
			$1.34/cwt	No	310-350		"	M↔U.S.
			$2.10/cwt	No	700		"	M↔U.S.
EM9	GF	bushel	$0.506/bush	Yes	≈ 220		corn	U.S.→M
		cwt	$1.15/cwt	Yes	≈ 220		sunflower	M→U.S.
EM10	PSV	mile	$1.00-$1.10/mile	Yes	350-550		flax, rye corn	M↔U.S.
EM11	Shipper	tonne	$38.00	typically no	494		rye	Manitoba points to Thunder Bay
			$39.00		497			
			$44.50		578		flax	
			$49.00		647			
			$54.00		754			

be noted that: (a) these comments are primarily in respect of 5-axle equipment, (b) there will be many variations of rates between these two levels (depending on backhaul opportunities, competitive pressures, etc.), and, (c) these comments are really only relevant on heavy traffic lanes.

Fertilizer rates in Manitoba are based solely on the 50 ton point-to-point rail rates from Alberta to Manitoba centres.

5.6 Summary and Observations on Commercial Grain Trucking Rates

Previous sections have detailed the rate situation in each province. Figure 5.6 presents a summary of this rate information in terms of $/tonne vs. shipment distance for standard semi-trailer load, 23 tonne lots, applicable Fall/Winter 1982. Figure 5.7 transforms this rate information into 'revenue per mile' as a functicn of shipping distance.

The following observations are relevant:

Respecting the Regulatory Environment

Grain (and fertilizer) trucking rates are unregulated, intra and extraprovincially, throughout the Prairie region.

Respecting the Structure of the Rate Schedule

There are three basic components to the rate schedule:

Local Rates: These rates are applicable for short, nearly always intraprovincial hauls of up to about 50 miles in length; they can be visualized as an essentially flat $/load charge; they envisage effectively empty backhaul, with 45-50% of total miles being run empty.

Mid-distance Rates: These rates apply to mid-distance, primarily intraprovincial hauls of between 50 and (about) 250 miles; they can be visualized as a (reasonably constant) $/tonne-mile charge; they envisage some backhaul movement, with 30-40% of total miles being run empty.

Long-distance Rates: These rates apply to long-distance, primarily extraprovincial hauls of greater than 250-300 miles in length; they can be visualized as a (more or less) constant $/tonne charge; they envisage well-balanced loading, with only 10-15% of total miles being run empty.

(In isolated special circumstances, such as spot market movements to Thunder Bay, long-distance grain rates envisaging empty backhaul are assessed.)

The three components of the rate schedule have important differences in their basic rationale, as follows:

Local Rates: apply to situations where time-sensitive costs (e.g., loading and unloading costs, administrative costs, licensing and insurance, etc.) dominate.

Mid-distance Rates: apply to situations where distance-sensitive costs (e.g., fuel, driving labor, etc.) dominate.

Long-distance Rates: apply to situations where the commodity market prices become a prime determinant of an acceptable upper limit on the price of transport. To illustrate, if there is a $25/tonne spread in commodity price between two different suppliers, then the low-priced supplier can afford to pay a transport rate up to the amount of the spread; if the trucker wants the business, he must meet that price.

Commercial grain trucking rates are generally insensitive to shipment size and commodity type.

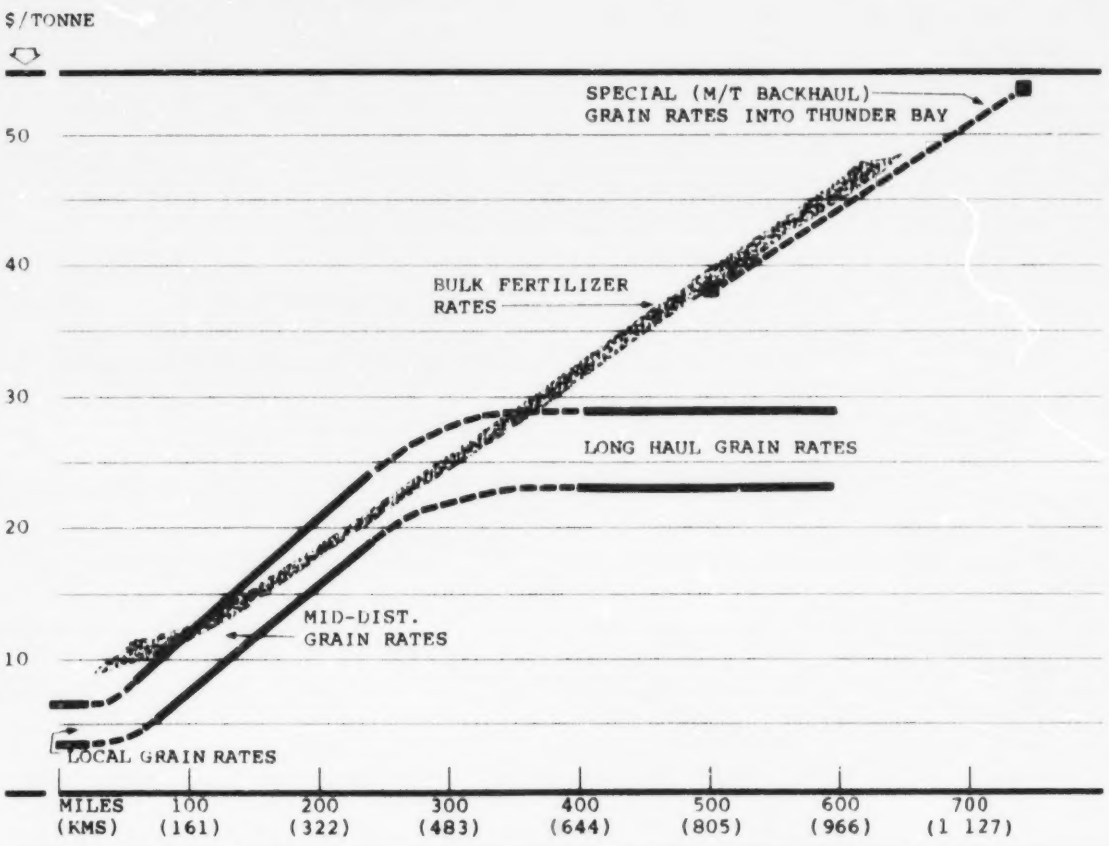
There are some important exceptions to this: i) three of Saskatchewan's large commercial grain truckers have introduced a lower $/tonne rate for train load (35 tonne) lots; ii) in a few other isolated instances, train load lot discounts may apply; iii) particularly low-density commodities (e.g., sunflowers) are at times assessed premium per/tonne charges.

Respecting the train-load lot issue, however, the reduced rates available from the three Saskatchewan carriers still fall within the rate range illustrated in Figure 5.6. What this means is that other carriers, and sometimes these same carriers discounting from their 23 tonne tariff, meet the 35 tonne tariff regardless.

Generally, there has been inadequate time for the market to adjust itself to the potential unit cost savings associated with train load lots in a manner which would be clearly reflected in the rate schedules. (It is pertinent to observe that many in

FIGURE 5.6

COMMERCIAL GRAIN (AND FERTILIZER) TRUCKING RATES
SUMMARY: ALL PRAIRIE REGION CARRIERS FALL/WINTER: 1982
$/tonne vs. shipment distance (miles)
APPLICABLE TO STANDARD SEMI-TRAILER
LOAD LOTS OF APPROXIMATELY 23 TONNES



NOTES:

1. Local rates envisage essentially M/T backhaul; mid-distance rates envisage some backhaul (i.e. 30-40% of total miles are run (M/T); long haul rates envisage well balanced loading (i.e. 10-15% of total miles are run M/T).

2. The range of grain rates shown is applicable in all 3 prairie provinces. Only in isolated cases are rates assessed above or below the range shown. Actual rates assessed in any particular situation (while being within the range shown) will vary by carrier, competitive circumstances, backhaul opportunity, commodity, and/or shipment size.

the industry are not convinced that such adjustments will necessarily occur for some time anyway.)

Respecting 'low-density' commodities, their proportion of the total market is relatively small, and thus could not be expected to be overly obvious in the rate schedule. Further, 'extenders' and other vehicle modifications to increase volume-capacity to the point where vehicles weight-out with low-density products are feasible, and indeed would occur where a carrier was heavily involved in handling such commodities.

The rate schedule is generally insensitive to roadway class and condition over which movements occur.

The industry 'thinks' in terms of a 23 tonne (plus or minus 1 tonne) normal load. This payload is legal on all Class 1 and Class 2 highways, and in a practical sense, is handled on many Class 3 highways, legal or not.

Nonetheless, at times, premium rates may be assessed if the routing involves particularly bad roads; even then, seldom would the premiums lead to rate charges beyond the rate range shown in Figure 5.6.

The rate schedule does not explicitly accommodate seasonality factors or differences in loading/unloading conditions.

The influence of these and other similar factors would be felt on a day-to-day market basis, but whatever the case would seldom have effect beyond the rate range shown.

Respecting the Level of Rates

Referencing Figure 5.6, the ranges of actual rates are:

Local Rates: $3.50 to $6.50/tonne, with most between $4.50 and $5.50, or $100-$125 per 23 tonne load.

Mid-distance Rates: 7.5¢/tonne-mile to a high of 12.0¢/tonne-mile at the low end of the distance scale and 10.0¢/tonne-mile at the high end.

Long-haul Rates: $23 to $29/tonne, with most between $24 and $27, or $550-$620 per 23 tonne load.

There is no distinguishable difference in rate levels between provinces (i.e., the above rates are experienced using operators domiciled in all three provinces).

Respecting the Methods of Rate Determination

Generally speaking, a very competitive marketplace is determining rate levels and rate structures.

However, carrier discussions, in particular within the context of the Alberta Trucking Association and more importantly the Western Tariff Bureau, coupled with shipper stipulated schedules (e.g., NARP in Alberta) and carrier-shipper negotiations on bulk fertilizer rates, obviously influence the general shape and level of the rate schedules for the local and mid-distance hauls.

The extent of this influence is difficult to gauge, but whatever the case, these 'influences' would appear to serve as only 'norms' for very competitive - almost day-to-day - rate setting practices.

Respecting Grain vs. Fertilizer Rates

Figure 5.6, in addition to illustrating the grain rate range, illustrates the truck fertilizer rate range stipulated by the Alberta and Saskatchewan Wheat Pools, again envisaging 23 tonne loads (plus or minus a bit).

The fertilizer rates are substantially higher than the grain rates for shipping distances of less than 100 miles, are within the grain rate range for 100-350 mile shipments and are substantially higher for long-distance moves.

The rationale for the difference on the short-haul moves is not clear. Whatever the case, it is largely irrelevant for the Saskatchewan Wheat Pool, in that their movements are typically longer than 100 miles, with shipments originating in Medicine Hat or Calgary destined for Saskatchewan points.

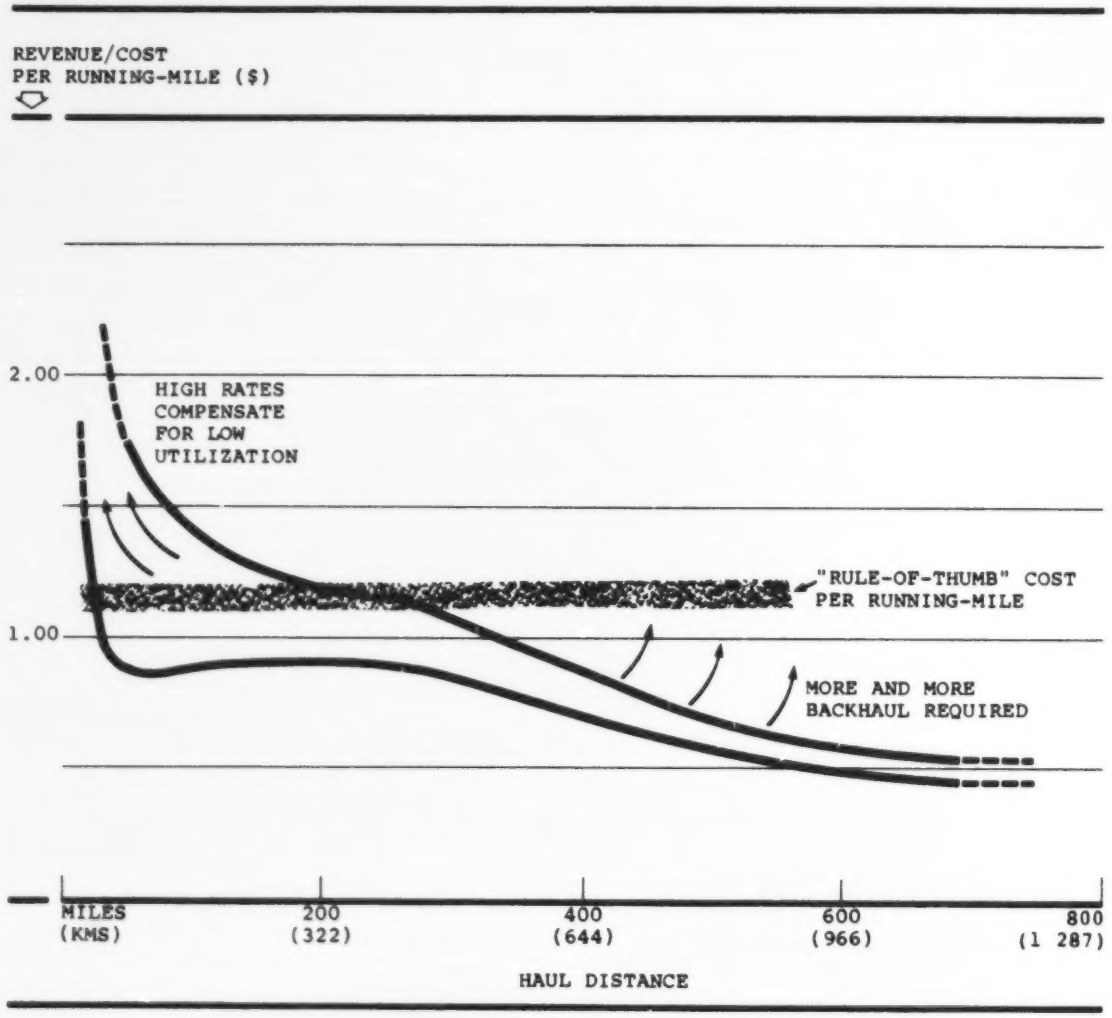
The rationale or the difference on long-distance hauls (less relevant for Alberta) is probably associated with the heavy spring and fall peaking characteristics of demand for fertilizer, and the attendant fact that under such conditions, it would be difficult for carriers to arrange well-balanced load conditions.

As previously noted, Figure 5.7 transforms the grain rate range illustrated in Figure 5.6 into revenue per mile as a

FIGURE 5.7

COMMERCIAL GRAIN TRUCKING $/TONNE RATE SCHEDULE TRANSFORMED TO REVENUE PER MILE

(Based on 23-tonne lot)



NOTES:

The "rule-of-thumb" cost per running-mile is applicable for a standard power unit-semi combination experiencing good utilization (say 90 000-110 000 miles/year) in bulk commodity, point-to-point hauls, during fall/winter 1982.

function of shipping distance, assuming a 23 tonne load and empty backhaul. It is interesting to compare this revenue per mile range with the current, Prairie region 'rule-of-thumb' mileage cost associated with operation of a standard 5-axle unit, assuming 'good' utilization (of say 90 000-110 000 miles/year). The current 'rule-of-thumb' cost, including profit, is $1.10-$1.20/running-mile. As illustrated in Figure 5.7, this 'rule-of-thumb' cost falls comfortably into the revenue per mile range illustrated for haul lengths of 75-150 miles. For a steady haul at shorter distances (say 30 miles), it is operationally difficult to achieve the 'good' utilization level associated with the $1.00-$1.20 figure. As the haul distance declines, the utilization level declines very rapidly, leading to the higher running-mile costs reflected in the rapidly increasing revenue-per-mile figure. At haul distances greater than 200 miles, the revenue-per-mile generated by the existing rates falls below the running-mile cost. Thus, for a carrier to operate in this range, it is necessary to generate additional revenue, by obtaining backhaul traffic. For steady operation at the 600 mile range, it is obvious that, given current rate levels, the carrier must operate at effectively balanced-load conditions.

REFERENCES

1 To this effect, truck rates for fertilizer were initially devised as rail competitive rates; only when trucks achieved domination in the market was a specific truck-fertilizer rate established. On the other hand, the first significant truck-grain rate schedules applicable in the Prairies were negotiated between the Alberta and Saskatchewan Trucking Associations and the Canadian Wheat Board; these were developed to service 'test' moves by commercial truck from country elevators to inland terminals.

2 Esso Chemicals, in Beamer and Red Water; Cominco, in Calgary; Carsland and Fort McLeod; Sherritt Gordon Mines, in Fort Saskatchewan.

Chapter 6

COMMENTARY

This study has been directed at developing a better understanding of certain aspects of commercial grain trucking in the Prairie region. Matters of particular interest have been: the regulatory environment governing the industry; the makeup of the industry, fleet size and vehicle characteristics; certain operational characteristics; and the industry's rate structure and level. The study has not been directed at developing conclusions or putting forward recommendations.

Nevertheless, in the course of conducting the work, the authors have come to a consensus on certain matters which they feel would be useful to bring forward and record for public assessment. In particular, the following opinions are expressed:

(i) Commercial grain truckers play a key role in servicing the following components of western Canadian agriculture: movements of grain into processing plants; movements of specialty crops into terminal and high through-put elevators; movements of other dry bulk products, and, in particular, fertilizer;

(ii) Short-haul distances and institutional factors prohibit making effective use of commercial grain trucks in servicing the vast majority of primary grain movements from the farm into the country elevator system; this situation is unlikely to change significantly for some time to come; and

(iii) There is substantial excess capacity in the current hopper-bottom fleet; it is reasonable to expect, however, that there will be pressure to modify the fleet makeup so as to accommodate more intra-regional grain and fertilizer movements in A and B-Trains rather than standard semis.